

JUL 16 1923

Railway Age

SECOND HALF OF 1923—No. 2

NEW YORK—JULY 14, 1923—CHICAGO

SIXTY-EIGHTH YEAR

Published Weekly by Simmons-Boardman Pub. Co., 30 Church St., New York, N. Y. Subscription Price U. S., Canada and Mexico, \$6.00; foreign countries (excepting daily editions), \$8.00, and \$10.00 a year including all dailies; single copies, 25c. Entered as second-class matter January 30, 1918, at the post office at New York, N. Y., under the act of March 3, 1879.



PERFECTION SELF GRINDING
WATER GLASS DRAIN

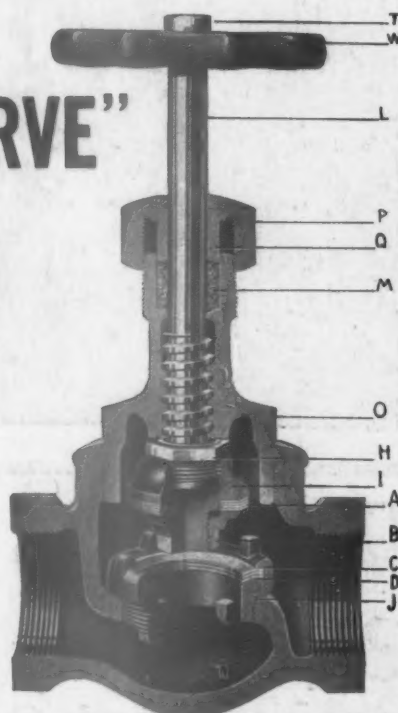
"VALVES THAT SERVE"

MULTIPLATE

VALVE "SERVICE" IS A PART OF THE VALVE

Special Blower Valves
Cab Steam Heat Valves
Reverse Gear Valves
Injector Steam Valves
Lubricator Steam Valves
Steam Heat Valves
Air Pump Steam Valves
Dynamo Valves
Boiler Filler Valves
and all other special Valves for
Locomotive Service

Perfection Water Column Valves
Perfection Coal Sprinkler Valves
Perfection Gauge Cocks
Duplex Blow-Off Cocks



MULTIPLATE GLOBE, ANGLE
AND CHECK VALVES FOR ALL
CLASSES OF SERVICE, MEDIUM
AND EXTRA HEAVY

WE ALSO MANUFACTURE
HIGH GRADE BRASS CASTINGS
AND **JOURNAL BEARINGS** FOR
Locomotives and Cars



O'MALLEY-BEARE VALVE CO., CHICAGO

General Office and Laboratory, 231-259 EAST 95TH STREET



Reading Replacers

Keep Your Yards Open

Reading Replacers placed at convenient points eliminate unnecessary delays. Rerailings can start at once. Replacers can be spiked in position or securely held by Reading Replacer Clamps, which can be applied without getting under equipment.

Made for all axle loads and heights of rails.

American Chain Company

INCORPORATED



Reading Specialties Division



General Sales Offices: BRIDGEPORT, CONN.

District Sales Offices: BOSTON CHICAGO NEW YORK PHILADELPHIA PITTSBURGH SAN FRANCISCO

EDITORIAL



Railway Age

The Table of Contents Will Be Found on Page 5 of the Advertising Section

Indexes to Volume 74

THE INDEXES to the last volume of the *Railway Age* are now ready for distribution. Those desiring indexes to this volume should kindly advise the New York office, 30 Church street.

Three states, adjacent to each other, now have laws requiring automobiles to be stopped before being driven across railroad tracks: Tennessee, Virginia and

"N. C. Stop Law" Is Now In Effect

North Carolina. In this territory the total length of the railroads is about 14,000 miles, which means, roughly, about 14,000 crossings. Here is an opportunity for the local newspapers to compare notes and see what can be done to awaken careless drivers. First, however, we should perhaps suggest that they see that their reporters gather facts concerning crossing dangers in greater volume than heretofore, and with the best possible care and attention to essential details. The officers of the law have a difficult problem before them, and the daily press has a definite duty in this respect. Even if rivalry between the states should develop into a contest, it is not likely that appreciable harm would result; though, of course, the true goal in every state should be universal obedience to the law, regardless of unenforced laws elsewhere. The Tennessee law has been on the books since 1917 but, so far as we can learn, is very generally neglected. Virginia adopted her law in 1922, and officers of two prominent Virginia roads assure us that they can see some improvement. North Carolina has just started in (July 1). "Cross crossings cautiously" is a tremendously important watchword; yet it covers a matter which is subject to so numerous and varied conflicting considerations that the task of making it effective is a never-ending one. This experiment in legal machinery, by which every incautious driver can readily be brought into court, ought to afford much useful information, not only for the three states immediately interested, but for the whole country. The North Carolina law provides an extreme penalty for violation of the law of \$10 fine and 10 days in jail. Evidently North Carolina is challenging herself to do better than Virginia, and very much better than Tennessee.

Of the several contributions which the A.R.A. Car Service Division has made to railway statistics, among the most valuable have been its various semi-

New Equipment Statistics

monthly reports of the car and locomotive repair situation. Analysts of railway operations have been hoping for years that some index could be devised to check up maintenance expenses to determine, in more adequate manner than the dollars and cents figures alone could show, whether maintenance of way and of equipment were being cared for adequately. Consideration of an index of maintenance of way conditions has been a fruitful field for discussion for some time, but the complications are such that the finding of the suitable index is still in the future. In the matter of an index of equipment maintenance—a much

simpler problem—we have had for some time the Car Service Division equipment repair condition reports. The value of these is shown by the fact that there are only a few railway figures which receive more attention than the semi-monthly figures of the per cent of bad order cars and un-serviceable locomotives shown in these reports. An innovation of great value has been introduced in the reports, effective as of June 1, in the form of more adequate data concerning car and locomotive repairs. In the case of cars, new columns have been introduced to show the number of cars repaired in the semi-monthly period covered, divided as between light and heavy repairs, a heavy repair being defined as one requiring over 20 man-hours. The locomotive compilation has previously contained a figure of "locomotives out of shop," of questionable value because of its all inclusiveness. This situation is remedied in the new report by a division as between light and heavy repairs. The figures of heavy repairs in each case will prove of great value as indicating the progress that is being made in repair work and as an index, of a sort, of the railway shop efficiency. Another interesting development is a new semi-monthly report showing locomotives installed in the period covered, locomotives retired and locomotives on order. The condition of a road's equipment is of such importance to its efficiency of operation that the knowledge that these figures will give us of the current conditions will prove of the greatest value.

Several railroads which do a heavy suburban passenger business make a practice of distributing in their trains from time to time bulletins informing their patrons

Public Relations Work Among Commuters

of work being undertaken to improve the service or to make it safer or more efficient. One of the most interesting examples of this which has come to our attention recently is an illustrated handbill issued by the Central of New Jersey describing the preliminary work for its new bridge across Newark bay. This bulletin is one of a series and carries the announcement that the management will give further information regarding the project as the work progresses. The average commuter is more of a railroad man than the person who travels by rail only once a week or once a month or once a year. In traveling over the same territory day after day he acquires a familiarity with the appearance of the route. He knows where the curves and grades are and he soon learns the places where delays are met with frequently. He knows the dangerous highway grade crossings. If locomotives are in poor condition, it does not take him long to find out about it. In short, the commuter, as contrasted with the casual traveler, as a rule has a groundwork knowledge of railroad conditions in his own territory second in thoroughness only to that of the men actually operating the road. Most railroads are realizing the importance of taking the public into their confidence and are generally less close-mouthed about their affairs than they used to be. It does not seem to be generally realized, however, that the commuting public can absorb a great many more facts about a railroad than can the public at large—almost as many as the employees themselves. Facts afford the only sound material for public relation work. There are facts enough available about any railroad to satisfy the most

curious. There may be a question as to how many of these facts can be laid before the general public without its becoming satiated. As for the commuting public, however, it must be admitted that its capacity for absorption is much greater than any diet of information which the railroads have as yet laid before it.

Surprise checking on the Buffalo, Rochester & Pittsburgh, in the month of May, in connection with all phases of safety of trains, resulted in a record of 99.9 per cent efficient, the total number of checks being 21,233 and of faults found, 21. This statement alone does not mean much; but the bulletin issued to the public contains the very essential additional statement that "not one of the infractions reported was of any serious consequence." In taking the public into your confidence it is highly desirable to be very explicit, and to include as much detail as the public can assimilate. A record of 99.9 per cent is a *very poor one*, when it appears in a report devoted exclusively to signal observance and other features in which a momentary error may wreck a train. No railroad officer gets any satisfaction out of a percentage in reports of this kind until he knows what the failures were; and it will be well to try to educate passengers to a similar attitude of scrutiny. When, for example, a railroad of a thousand miles has only one false-clear block signal in two years, it feels proud of the fact; and if patrons are to be taught to join in congratulations on such a record they must be made to understand that the percentage which they are looking for contains a fraction which requires a large number of nines at the right of the decimal point.

Car Pooling and Car Efficiency

THE *Railway Age* in commenting a few months ago on an address made at Cincinnati by S. Davies Warfield, remarked that perhaps the worst thing about the Warfield plan is the arguments advanced in favor of it. We are moved to repeat this remark by a letter from N. D. Ballantine, vice-president of the National Railway Service Corporation, which we publish elsewhere in this issue. Mr. Ballantine is a railway transportation man of long experience and ability and, therefore, his reasoning rather surprises us. His letter was written both to criticize an editorial recently published in this paper entitled "Remarkable Increase in Freight Car Efficiency" and as an argument in favor of the Warfield plan of car pooling. His attempt to bolster up the Warfield plan consists largely, however, of the citation of facts which tend to disprove the very thing he is trying to show—namely, the desirability of greater centralization of the control of the handling of freight cars.

In the editorial in our issue of June 30, to which he refers, we gave statistics showing that thus far in 1923 there has been a remarkable increase in the average miles traveled by each freight car daily. Mr. Ballantine objects to this use of what he calls "mass figures" and then proceeds to use "mass figures" of his own to show that there has been no such increase in freight car efficiency as we indicated. His statistics show that between June 30, 1916, and December 31, 1922, the number of freight cars owned by the railways increased 2 per cent, the number of locomotives 5.6 per cent and the aggregate tractive power of locomotives 21½ per cent, also that the total investment in road and equipment increased 22 per cent. He then adds that in spite of these facts "the loaded car miles during the nine months ended March, 1917, exceeded by 1.7 per cent the loaded car miles

made during the nine months ended March, 1923, six years later."

If it were fair to compare the operating results of the two periods, the statistics for which Mr. Ballantine uses, what would they show with reference to the Warfield plan? The fact is, that in the nine months ended with March, 1917, there was no such thing as a car pool and very little centralized distribution of freight cars, while in the nine months ended with March, 1923, the Car Service Division of the American Railway Association was exercising more centralized supervision over the distribution of freight cars than ever was exercised before when the railways were being privately operated. Therefore, if it were actually fair to compare the operating statistics of these two periods the conclusion they would logically suggest would be that the increase in the amount of centralized supervision of the distribution of cars had actually resulted in a decline in the efficiency with which they were used, which would hardly constitute a valid argument in favor of still greater centralization of supervision.

As a matter of fact, however, this comparison of the results in these two periods of nine months is not fair. Throughout the period of nine months ended with March, 1917, the railroads were handling a maximum business. On the other hand, in July, August and part of September, 1922, which he included in his second period, the coal strike was still in effect and preventing the railways from securing maximum utilization of their coal cars. In the seven months October, 1916, to April, 1917, inclusive, and the seven months October, 1922, to April, 1923, inclusive, the railroads had all the freight business they could handle. Therefore, these periods are in this respect comparable, and in the latter of the periods loaded car miles were more than 3.7 per cent greater than the former period. Furthermore, the number of revenue and non-revenue tons carried one mile in the latter period was 13½ per cent greater than in the former period. This increase in the freight service rendered was secured in spite of the fact that the railways were suffering from the effects of a shop employees' strike which had seriously crippled their equipment—a fact which Mr. Ballantine ignores.

Mr. Ballantine also tries to use as evidence in support of the Warfield plan the fact that in the nine months period ended with March, 1923, the proportion of empty car mileage to loaded car mileage was greater than in the period of nine months ended with March, 1917. This is true, but we are unable to see how it helps his case. As already stated, there was less centralized control over the distribution of cars in the first period that he mentions than in the second period, and, therefore, if the increase in the proportion of empty car mileage in the latter period is really pertinent to the matter under discussion, it indicates that the increase in centralized supervision increased the proportion of empty car mileage, and, therefore, on Mr. Ballantine's theory, reduced car efficiency.

Since the main point sought to be made in Mr. Ballantine's letter obviously is that the present method of handling freight cars causes unnecessary empty mileage, and since he obviously tries to convey the impression that the adoption of the Warfield plan would reduce empty mileage, it will be expedient to review briefly the history of the changes in the average amount of empty car mileage within recent years. In the ten years ending with 1922 the ratio of the empty to the total freight car mileage was as follows: 1913, 29.33 per cent; 1914, 31.23 per cent; 1915, 33.65 per cent; 1916, 29.8 per cent; 1917, 29.8 per cent; 1918, 32.28 per cent; 1919, 31.34 per cent; 1920, 32.1 per cent; 1921, 36.96 per cent; 1922, 32.8 per cent; first four months of 1923, 32.8 per cent. A glance at these figures shows that Mr. Ballantine made a skillful choice of statistics when he selected those of the years 1916 and 1917 to compare with those of

the years 1922 and 1923. He can hardly have been unaware that in 1916 and 1917 the amount of empty mileage was relatively smaller than in any other two out of the last 10 years. He advocates car pooling under the Warfield plan. The most complete pooling of cars ever effected was when the railways were being operated by the Railroad Administration in 1918 and 1919. The figures show that the ratio of empty to total car mileage in both 1918 and 1919 was greater than in either 1916 or 1917, when there was no actual car pooling. The ratio of empty to total mileage was also less in 1920 than in 1918, although greater than in 1919. Certainly, these statistics do not show that pooling tended to reduce empty car mileage.

The ratios of empty to total car mileage were the largest in the years 1914, 1915 and 1921. The reason for this is quite obvious. These were all years of business depression and light traffic. Under such conditions the movement of traffic tends to become unbalanced and there is a large movement of empty cars from railways that they happen to be on to the lines of the railways that own them.

Doubtless, under a plan of complete pooling of box cars the amount of empty mileage made in years of depression would be reduced. On the other hand, all the statistics we have cited tend to show that increased centralized control of the distribution of cars tends in periods of heavy traffic to increase rather than to reduce empty mileage, and we believe that this actually is its effect. In the absence of effective centralized supervision the natural disposition of each railway is not to send cars to other lines except under load. On the other hand, centralized control of car distribution results in individual railways which have upon their lines more cars than they are entitled to, being required to send them promptly to lines having less cars than they are entitled to, even though in order to send them to where they are most needed they must be sent empty. It is, of course, far better to have cars sent empty where they are needed than not to have them sent at all. But statistical evidence that increased centralized supervision tends to increase empty mileage in periods of heavy traffic does not tend to support Mr. Ballantine's argument that the Warfield plan would reduce empty mileage except in periods of depression.

Mr. Ballantine asks: "Do you still believe that the twelve railroad executives on the board of trustees would not be competent to select men qualified to view the situation from a national instead of a local standpoint, and provide the necessary machinery for its effective operation?" We have never expressed the opinion that the twelve presidents on the proposed board of trustees of the National Railway Service Corporation would not be able to do this, and, therefore, we do not have to withdraw any such opinion now. The fact is, however, that the members of the existing Car Service Commission, which at present has supervision over the distribution of cars, were selected by railway executives, and we know of no reason why railway executives serving as trustees of the National Railway Service Corporation would be able to select any better men than they can select while serving as directors of the American Railway Association.

Mr. Ballantine says in his letter that we interpreted President Harding's recent speech at Kansas City as "presenting arguments opposed to the Warfield plan of car pooling." We fear that Mr. Ballantine did not read our editorial with an understanding mind. What we actually said was: "The President made statements which might be construed to imply a leaning in favor of car pooling."

The *Railway Age* has two criticisms to make regarding the advocates of the Warfield plan. First, in the supposed interest of the railways as well as the public they constantly make attacks upon the efficiency of management of the railways which are in their way as well adapted to prejudice public opinion against private management as the attacks made by Brookhart and LaFollette. Secondly, they pre-

sent a plan, the adoption of which they contend would remedy the car shortage, and then constantly advance arguments in favor of it which ignore many pertinent facts and are full of fallacies, and do not show how the adoption of the Warfield plan would tend to remedy the car shortage.

Piece Work and Time Work Wages

BEFORE GOVERNMENT control of railroads was adopted a substantial part of the employees in railway shops were paid on a piece work basis instead of simply a certain amount per hour. Under government control the question of abolishing piece work was submitted to a vote of the shop employees and they voted to abolish it. Since the return of the railways to private operation, the piece work system has been restored in the shops of some railways. The Interstate Commerce Commission, in its report giving wage statistics for all railways for April, presented data showing the earnings per hour made in that month by shop employees of the Pennsylvania and New York Central whose wages were on a piece work basis and also statistics for those whose wages were on an hourly basis. These statistics were published in the *Railway Age* for July 7, page 39. Anybody who studies them will find some difficulty in deciding why employees in railroad shops could ever have objected or can object now to piece work wages.

The blacksmiths of the Pennsylvania who worked on a straight time basis in April earned an average of 74 cents an hour, while those who were paid on a piece work basis earned an average of \$1.07 an hour or 45 per cent more. The blacksmiths of the New York Central who were on a time basis earned 71 cents an hour while those who received piece work wages earned \$1.06 an hour or 50 per cent more. The boilermakers of the Pennsylvania who worked on a time basis averaged 75 cents an hour while those who were on a piece work basis averaged 97 cents an hour or 30 per cent more. The boilermakers of the New York Central who worked on a time basis earned 72 cents an hour while those who were paid on a piece work basis earned \$1.05 an hour, or almost 46 per cent more.

The differences between the earnings made by employees of other classes on a time basis and on a piece work basis correspond to the differences between the earnings of the blacksmiths and the boilermakers who were on these different bases. For example, car men on the Pennsylvania who were on a piece work basis earned 28 per cent more per hour than those who were on a time basis, while car men on the New York Central who were on a piece work basis earned 43 per cent more than those who were on a time basis. Helpers are unskilled workers. The skilled trades' helpers of the Pennsylvania who were on a time basis earned an average of 46 cents an hour, while those who were paid on a piece work basis earned 70 cents an hour, or more than 45 per cent more than the time workers. The average earnings of helpers in the New York Central shops who were on piece work were 46 per cent greater per hour than those who were paid on a time basis.

Although the facts are not available, it is a reasonable assumption that the piece work rates on these roads are such that not only do the piece workers earn very much more than the time workers, but that the railway gets more work in proportion to what it pays the piece workers than in proportion to what it pays the time workers. In other words, the piece work system operates to the advantage of both the railway and the employee.

One would think from such figures that the employees would be as eager as the employers for the general adoption

of the piece work basis. As a matter of fact, however, only from a minimum of 20 per cent to a maximum of 45 per cent of the men of the various crafts in the shops of these railways were on a piece work basis. Piece work rates to be truly beneficial must both give the employee more earnings for a given number of hours of work, and the employer more work for a given amount of wages than wages paid on the time basis. Certainly these figures show that the employees who have accepted the piece work basis are profiting handsomely by having done so.

Public Utility Leaders on Public Relations Work

THE PUBLIC UTILITIES of the country have been confronted, within the last fifteen years, with problems very similar to those of the railroads, and, generally speaking, they have made more progress in solving them. Their rates, like those of the railroads, are subject to public regulation. Like the railroads they were suffering before the world war from the effects of general advances in prices and wages which had not been counterbalanced by advances in rates. When the war caused very great further advances in prices and wages the public utilities had to get corresponding advances in rates, or be ruined. Most of them succeeded in doing so. In consequence the public utility industry in general has been, for some time, and is even now, in much better financial condition than the railroads. Furthermore, attacks upon the rates and earnings of public utilities have become much rarer than formerly, while the railroads are at present being subjected, from certain sources, to some of the most bitter and dangerous onslaughts which they have ever had to meet.

In the light of these facts views regarding the best methods for establishing satisfactory relations with the public which recently have been expressed by certain leaders in the public utility field should be interesting to railroad officers. Britton I. Budd, president of the Chicago Elevated Railroads, said in a recent address:

"How is confidence in the railroads to be restored? That is the most important problem which confronts them. There can be no doubt of the ability of the roads to give the country adequate transportation if they have the confidence of the people. It seems equally certain that the confidence of the public cannot be secured by making apologies and explanations.

"The policy which the railroads generally have pursued should, in my opinion, be completely reversed. Their publicity departments should stop making apologies and explanations, and tell the public some of the things the railroads have done and are doing. A notable few are pursuing that course, but the policy should be general. It should be systematic, extensive and intensive.

"There is every reason why the railroads should drop the negative and assume a positive position in their publicity and advertising. They have a wonderful story to tell. Their record of accomplishments stands out so prominently that it commands at once the attention and admiration of every thinking citizen. It should be made known to every one who speaks and reads the language of our country."

More recently P. H. Gadsden, vice-president of the United Gas Improvement Company of Philadelphia, said:

"The usual plan is that a public utility company neglects to adopt such publicity methods, thinking it is saving money; then some crisis in the company's affairs arises and immediately a frenzied resort is had to newspaper advertising in the futile effort to reach the public ear—in the vain hope that having neglected to cultivate the public all along, the people will listen sympathetically at such a late date to the company's case.

"This kind of publicity under such circumstances is of little benefit. It is almost a waste of money. Publicity to be really effective must be continuous, sustained, day in and day out.

Acquiring the good will of the public is like establishing a man's character; it is not built up by spasmodic efforts nor based upon exceptional acts."

Mr. Gadsden delivered his address before the Public Utilities Advertising Association, which was discussing plans for increasing the advertising expenditures of company members to one per cent of their total earnings. The total earnings of the railways are now running at the annual rate of over six billion dollars a year. Therefore, one per cent of their total earnings would be over 60 million dollars, or almost seven times as much as they ever spent for all their advertising in any year.

The most important point made by Mr. Budd in the part of his address we have quoted is that the railroads "should drop the negative and assume a positive position in their publicity and advertising." "They have," as he says, "a wonderful story to tell," and they ought to tell it until everybody has read or heard it. They should answer every attack made upon them, but they should, at the same time, tell of their achievements and give their critics something to answer.

The most important point made in the part of Mr. Gadsden's address that we have quoted is that "publicity to be really effective must be continuous," and not resorted to merely in emergencies. Public relations' work of a continuous, broad and effective kind by public utilities and railroads is needed not merely to meet emergencies but to prevent them. The wise man does not call in the doctor only when he is desperately sick, but tries to take care of his health all the time so that the doctor's calls will not be necessary. Because of their peculiar nature railroads and public utilities always will have public relations problems to solve, and they will never solve and keep them solved satisfactorily until they make their study and solution an everyday part of the management of the properties.

Separate Settlement for Rebuilt Cars

IN last week's issue there appeared an appeal for the restoration in the rules of interchange of a separate basis of settlement for rebuilt cars destroyed in interchange, which will permit these cars to be depreciated from the date of rebuilding instead of from the date of original construction, as the rules now require. The foundation for this plea is the fact that the Interstate Commerce Commission's accounting rules require that when repairs to a unit of equipment are so heavy that the renewals constitute the major parts of the value of the equipment as repaired, the unit must be written out of the books and the rebuilt unit reinstated at an appraised value based on the value of the new material applied plus the depreciated value of the old material remaining in the rebuilt unit.

It is not the purpose of the *Railway Age* to discourage the restoration of such a basis of settlement as will reimburse car owners for the actual value of the property destroyed. This publication has always maintained that all inter-railway business under the rules of interchange should be handled on a business basis rather than on an arbitrary basis without relation to the values involved. But the interests of the railroads as a whole require that the standards established by the Mechanical Division be incorporated in the construction of all of the equipment of the country with as little delay as possible and it is well to consider what the restoration of an unrestricted basis of settlement for cars rebuilt within the meaning of the Interstate Commerce Commission rules, as if new, is likely to have on this aspect of the situation.

In the first place, there is nothing in the Interstate Com-

merce Commission rules which requires the introduction of any betterments whatever into the construction of a rebuilt car in order that it may be reinstated at a new and much increased figure as the result of present prices of labor and material. In effect, therefore, this provision makes possible the capitalization of a large part of the cost of repairing a badly run-down car, while a car of equal service value, maintained currently, would still be carried on the books at its original cost. In some cases this might be an inducement for a weak railroad to deliberately neglect the current maintenance of its equipment in order that maintenance expenses might ultimately be relieved at the expense of the capital account. In order that this could be done, however, it would be necessary that charges to depreciation in the maintenance accounts had accumulated a large part of the original cost of the unit or the retirement charge might offset the saving in the maintenance charges effected by the re-capitalizing process. In any event, after having been rebuilt without betterments, the car would be no more adequate to meet modern service conditions than a similar car, the condition of which had been restored through current maintenance operations.

The number of cars destroyed will probably not exceed one per thousand cars owned unless the character of the equipment offered in interchange by the owner is much below the average of the equipment of the country. It would seem, therefore, that the advantage to be gained by car owners through the restoration of the unrestricted privilege of settlement for destroyed cars based on depreciation from the date of rebuilding, irrespective of the type of the original construction and without betterments, would be small compared with the incentive which such a basis of settlement might offer for indefinitely continuing in service cars of a type of construction inadequate to meet the requirements of modern operating conditions. If the separate settlement is restored, therefore, it should be surrounded with limitations which will require that the rebuilt equipment meet adequate standards as to strength of construction.

Car Service Statistics

THE QUESTION has been suggested as to whether there may not be secured from the material compiled and issued periodically by the A.R.A. Car Service Division a much more adequate picture of current railway transportation conditions that can be secured from the operating statistics issued by the Interstate Commerce Commission. One set of data is supplementary to the other and both are necessary if the operating man desires the whole story of what is going on.

The Car Service Division figures—originally instituted as a guide to managing the country's car supply—have now had their use so broadened that already they are, in their several forms, now looked upon as the test indices of railway transportation performance. In a short space of time they have reached a place in railway publicity or in the analysis of current railway operation second only to that attained by the monthly report of revenues and expenses. As compared with the Car Service Division reports, the statistics shown on the I. C. C. operating statistics (O. S.) reports have the advantage of being possibly more accurate in definition and compilation. The O. S. compilation suffers in the comparison, on the other hand, because it is less timely—in other words, follows less closely after the performance. Unfortunately, also, the O. S. figures have a disconcerting manner of varying, as the case may be, directly or inversely with the volume of traffic so closely that it is difficult in using them to tell whether the improvement in a particular figure is due to increased traffic movement or to increased efficiency.

This may be summarized by pointing out that the latest O. S. figures available are those for April. They show up well, due largely to the heavy April business. The Car

Service Division figures are now available as late as the middle of June. There is nothing as satisfying in the April O. S. compilation as there is in the Car Service Division reports showing that up to the week ended June 23, four out of five weeks had shown loadings of over 1,000,000 cars, while at the same time there was the unprecedented favorable condition, with like traffic volume, of a substantial surplus of cars.

New Books and Special Articles of Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books

Legal Aspects of Construction Enterprises in Asiatic Countries, compiled by A. J. Wolfe, U. S. Dept. of Commerce. Trade Information Bulletin No. 121. Covers procedure necessary in China, Japan, Siam, Persia and Syria, for firms undertaking contracts. 9 pp. Published by Government Printing Office, Washington.

Railway Rates Tribunal: Jurisdiction and Practice, by George M. Garro Jones. A study of the tribunal for regulation of British railway rates established under the Railways Act, 1921. 120 pp. Published by Palethorpe & Cond, Ltd., London.

The Railways and the People, by Sterling P. King. The author advocates government purchase of railways at what he estimates to be the market value (approx. \$15,000,000,000) and operation of them free as solution of transportation and economic problem. 170 pp. Published by the Four Seas Co., Boston.

Periodical Articles

Compulsory Consolidation of Railroads. Comment on position of "strong" and "weak" roads under any consolidation. Independent, July 7, 1923, pp. 413-414.

Detroit's Street Railways, by John W. Colton. Survey of results of municipal ownership in Detroit, the influence of Senator Couzens, and other factors with comparisons and comment. Aera, July, 1923, pp. 1561-1574.

Edison Himself Answers a Questionnaire, prepared by Byron R. Newton. Seven-word epitome on transport troubles in Question 10. Collier's, July 14, 1923, p. 10.

Experiences of a Railway Conductor, by A. B. Smith. Conductor of Twentieth Century Limited reviews human nature as he sees it. American Magazine, July, 1923, pp. 52-53, 142-147.

A Giant Knocks at Your Door, by Charles Merz. First of a series on the possibilities of super-power development, one result of which, the author believes, will be decentralization of transportation and other industries. Collier's, July 14, 1923, pp. 8-9.

Is Our Democracy Stagnant? by Frank I. Cobb. "Interstate commerce is the twentieth century's irrepressible conflict." [under the Constitution.] Harper's, June, 1923, pp. 1-6.

Labor and Democratic Control, Glenn Plumb's Plan for Equal Representation of the Workers, the Managers, and the Public, by John Corbin. Chiefly a commentary on Mr. Plumb's book noted in list in issue of June 16, with observations on present industrial situation and other plans for its betterment. New York Times Book Review and Magazine, July 8, 1923, pp. 1, 27.

The Renaissance of American Railroads. I. [Introduction], II. Historical. International Interpreter, June 30, 1923, pp. 404-406, and July 7, 1923, pp. 437-439, with Editorial "The Opportunity of the American Railroad Men," pp. 387-388 of June 30 issue.

Letters to the Editor

[The RAILWAY AGE welcomes letters from its readers and especially those containing constructive suggestions for improvements in the railway field. Short letters—about 250 words—are particularly appreciated. The editors do not hold themselves responsible for facts or opinions expressed.]

Car Efficiency and Car Pooling

BALTIMORE, Md.

TO THE EDITOR:

Referring to an editorial appearing in *Railway Age* for June 30, 1923, entitled "Remarkable Increase in Freight Car Efficiency."

With no intent to disparage the efforts being made or discredit the results being obtained by individual carriers, but with a real desire to look the matter squarely in the face that we may not be deceiving ourselves and friends and reap the reward which eventually follows such procedure, it is submitted that "mass figures" such as "Tons per Loaded Car" or "Miles per Car per Day" by themselves for all cars loaded or for all cars in the country do not spell efficiency. It can readily be proven and is quite generally known by transportation men that a decrease in tons per car for all cars loaded is not inconsistent with increased efficiency in their loading when the commodities loaded are analyzed. The same may be said of "Miles per Car per Day" if the higher miles per car per day are accompanied by unnecessary and uneconomic empty car movements.

As bearing upon the above points, the following comparisons for Class I railroads should be of interest:

	Amount Dec. 31, 1922	Per Cent Inc. versus June 30, 1916
Total mileage operated.....	235,081	1.6
Investment in road and equipment.....	\$20,743,316,000.00	22.1
Freight cars	2,310,000	2.0
Locomotives	64,453	5.6
Locomotives' average tractive power.....	37,692	15.2
Locomotives' aggregate tractive power....	2,429,362,467	21.5

Regardless of an increase of \$3,752,316,000.00 or 22.1 per cent in the total investments in road and equipment and of 21.5 per cent in aggregate tractive power during five and one-half years, the loaded car miles during the nine months ended March, 1917 exceeded by 1.7 per cent the loaded car miles made during the nine months ended March, 1923, six years later, this being the interval referred to in the American Railway Association Constructive Transportation Program for 1923 as "the period in which the greatest volume of traffic ever transported in the history of the country during any corresponding period of 37 weeks."

In the latter period with a decrease in Loaded Car Miles versus six years earlier, there were increases as follows:

	7 mos. to April 30, 1923 Compared with 7 mos. to April 30, 1917	
Empty car miles.....	9.2%	23.5%
Ratio of empty to loaded car miles.....	11.1%	19.0%
Total car miles.....	1.5%	9.4%
Tons per loaded car.....	7.8%	9.6%

With respect to the statement contained in the editorial reading "What could and would be accomplished under the Warfield plan is a matter of theory, while what is being accomplished by present methods is a matter of incontrovertible fact."

The *Railway Age* undoubtedly knows that:

Carriers have had no control over their own equipment while away from home, particularly during periods of heavy demand, as is presumed to be provided for in their agreement known as the Car Service Rules.

Carriers have made a great deal of unnecessary empty car mileage during periods of car surpluses.

Carriers have not made repairs to foreign equipment to the same extent they do to their own cars as provided in their agreement known as the M. C. B. Rules.

Adherence to a "theory" instead of recognition of a "condition" and the application of a practical remedy through providing a central agency with authority, is responsible for the continually recurring arguments and disputes between carriers.

The proceedings of the American Railway Association are replete with evidences that the Car Service Rules based on "ownership principle" have not been effective in producing equity in distribution or economy in handling the freight cars of the country, and that the Interstate Commerce Commission has been appealed to by the carriers themselves for relief.

Surely no one familiar with transportation in this country would today urge that because sleeping cars are not owned and controlled by railroads, that such fact destroys the initiative, rivalry in efficiency or competition in securing and handling passenger traffic.

The Pacific Fruit Express Company and the Fruit Growers' Express Company represent efficiently operated, but limited, freight car pools, and it could hardly be said with accuracy that by reason of such pooling of freight cars, the Southern Pacific, Union Pacific or Western Pacific, the owners of P. F. E. cars, were lacking in initiative, interest or efficiency in protecting patrons served by them requiring refrigerator equipment.

Evidently you do not understand that the plan proposed by Mr. Warfield provided: first, for authority; second, for a board of trustees, twelve of whom are to be railroad executives, three from each of the four rate-making groups, they in turn to select transportation experts from the various groups necessary to make a survey, recommendations and handle details, all of which is to be under the supervision of the Interstate Commerce Commission, but without cost to the government.

In view of the above, do you still feel that the twelve railroad executives on the board of trustees would not be competent to select men qualified to view the situation from a national instead of a local standpoint and provide the necessary machinery for its effective operation?

With regard to your interpretation of President Harding's recent Kansas City speech, as presenting argument opposed to the Warfield plan of car pooling.

That your readers may know what the newspapers report President Harding as having said in his Kansas City speech, I quote below extracts therefrom:

"The Transportation system must be considered as a unity, precisely as the Nation itself must be considered. In this manner we will best help to insure the credit of the railroads, assist them to new capital for future expansion and insure, for the future, against the sort of wildcat and competitive railroad constructions, which in the past has been responsible for giving us a great share of the trackage which now proves economically unjustified.

"To meet this condition the proposal of a nation wide car pool has lately attracted much attention. The Pullman Company fairly illustrates what is meant. This great corporation provides most of the railroads with certain kinds of cars on a rental basis. Applying the same idea to the provisions of freight cars, you have a rough notion of the proposed car pool."

Believing that you are sincerely endeavoring to present unprejudiced facts to your readers, I trust you will give them an opportunity to view the other side of the question through the same publicity to this communication as was afforded your editorial.

N. D. BALLANTINE,
Vice-President, National Railway Service Corporation.

Lax Grading Now Characterizes Tie Inspection

Active Buying Competition Among Roads is Leading to Many Deviations from Specifications

DO THE RAILWAYS desire good ties? It goes without saying that they do. Yet many of them are now permitting and in some cases openly encouraging practices which are defeating this objective. Since the railroads consume almost the entire output of ties they must of necessity pay the full cost of production, including any practices which add to the expense, either directly or indirectly. They have a direct incentive, therefore, to refrain from any practices which will demoralize the production of ties, reduce their quality or contribute in any other way to increased costs. In spite of this interest, the methods under which ties are now being purchased are adding many millions of dollars to their first cost as well as to their ultimate cost by reason of the poorer quality which is being accepted and the shorter life which will therefore be secured from them. These practices, which it is within the control of the roads to correct, are so pronounced at the present time that they demand special consideration. For this reason, a member of the editorial staff of the *Railway Age* has made an extended investigation of conditions in the areas in which the major portion of the country's supply of ties is being produced, in the belief that a statement of the practices which now prevail in these areas will make the objections to them so self-evident as to lead to their correction.

Wide Variation in Purchases Demoralizes Market

These conditions grow out of the fact that the tie producing industry has long suffered from wide fluctuations in the number of ties purchased by the roads. Although the deterioration of ties in service is relatively uniform, the time when they should come out is to some extent a matter of judgment and there is usually a sufficient factor of safety to permit the number to be renewed in any season to be varied to a considerable extent. As a result, tie renewals have been permitted to fluctuate more directly with the earnings of the roads than sound maintenance practices would dictate. Furthermore, many of the roads have usually postponed their purchases until the last minute and have then rushed into the market for quantities greater than could be produced quickly. The result has been to create alternate periods of heavy and light demand. When the roads are actively after ties, they compete with each other, running the prices up in an effort to stimulate demand and permitting deviations from specifications to increase the number accepted. The result has been to lower the average quality of the ties by accepting those of inferior grades and thereby encouraging their production.

Specifications Must Be Supported by Inspection

Following the quite general adoption by the roads of the American Railway Engineering Association specifications for cross ties, it was felt by many railway men that the problem of securing a satisfactory supply of ties of the proper grades was solved. However, they overlooked the fact that a specification is only as good as the inspection which is instituted to enforce its provisions. As a result the conditions which are now prevailing in the purchase of ties differ little from those which have existed previously in times of excessive demand. Investigations extending over the principal tie producing areas of the United States, supplemented by visits to the woods, and the examination of thousands of freshly cut ties, show that the same objectionable conditions prevail in most areas and are not confined to any one locality. Conditions

this year differ from those of past years only to the extent that more roads and purchasers than formerly are adhering closely to the intent of the specifications than in past years. They are, however, encountering much difficulty in securing the desired number of ties because a much larger number of roads and producers are not enforcing the specifications.

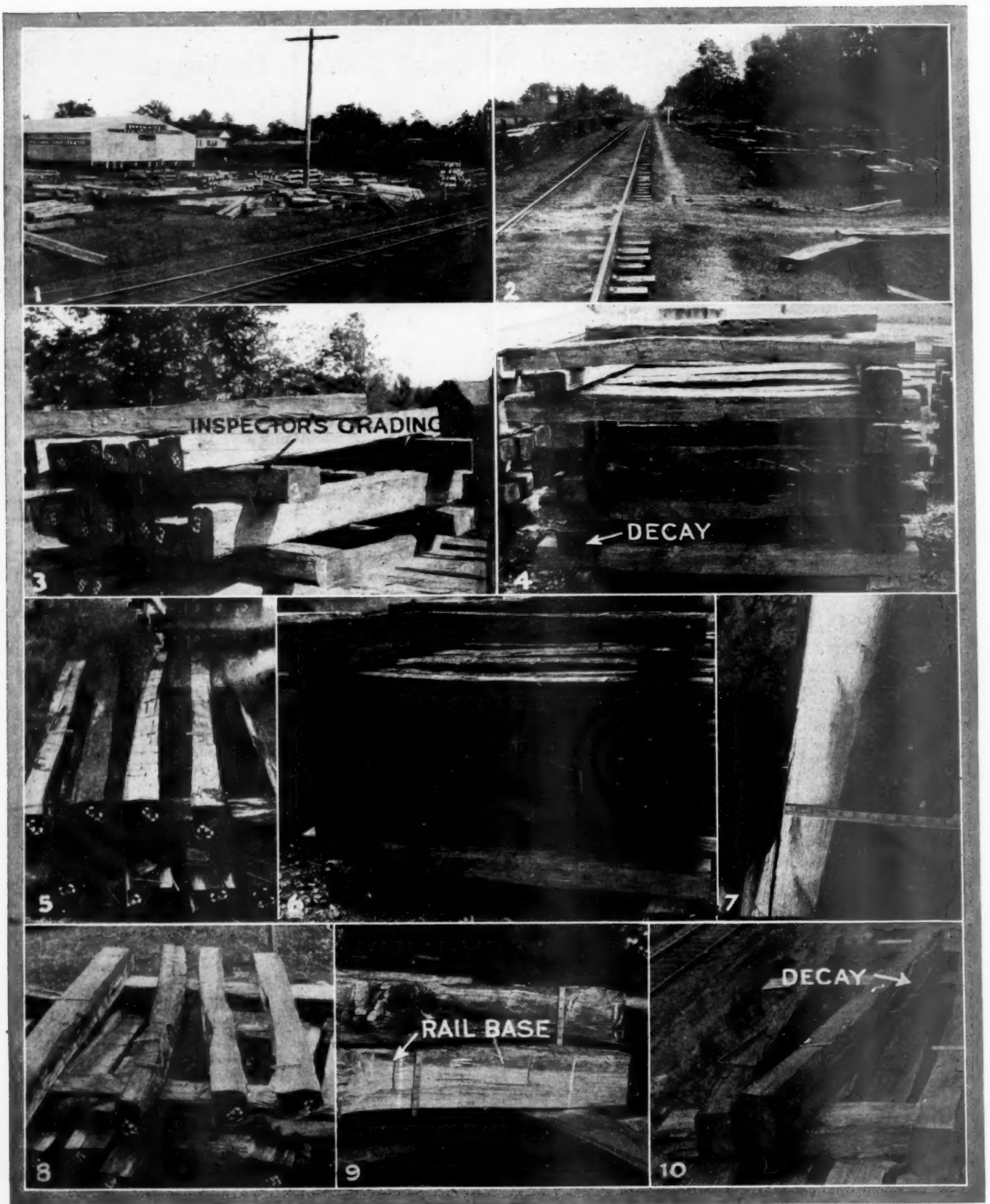
As in the past, the withdrawal of the roads from the market in 1921 and early in 1922 resulted in the reduction in the price paid for those ties produced and this, in turn, led to the curtailment of production. Without an outlet for their ties, many producers turned to other work. During this time the specifications were enforced rigidly by most of the roads in their attempt to select the better grades of the ties available and to reject the remainder. While some of the tie producing companies had sufficient financial resources to continue production and store ties until the roads returned to the market, few have been willing to take the chance because of uncertainty regarding the nature of the inspection to which their ties would be subjected. As a result, when the roads entered the market for ties last fall, they found disorganization among the tie producers and small reserve stocks. Before the producers could organize their forces and increase their production, the roads had come into the market in such numbers and for such large quantities of ties that the demand far exceeded the supply. As a result, prices rose rapidly and, even more serious, there has developed a general laxity in the enforcement of the specifications, resulting in the acceptance of ties which failed to comply with the specifications for the grades indicated. These conditions have grown steadily worse and the market has become seriously demoralized by the deviations from standards, which have become so pronounced in many localities that the specifications exist in name only. In fact, in an effort to secure the number of ties, certain roads have waived their specifications entirely and have accepted contractor's gradings without a guarantee of protection of any kind.

Many Ties Are Being Overgraded

The deviations from the specifications may be grouped into two principal classes. The most common is the practice of overgrading ties or accepting them for grades higher than their size warrants. A second abuse is the acceptance of ties in which decay is clearly evident.

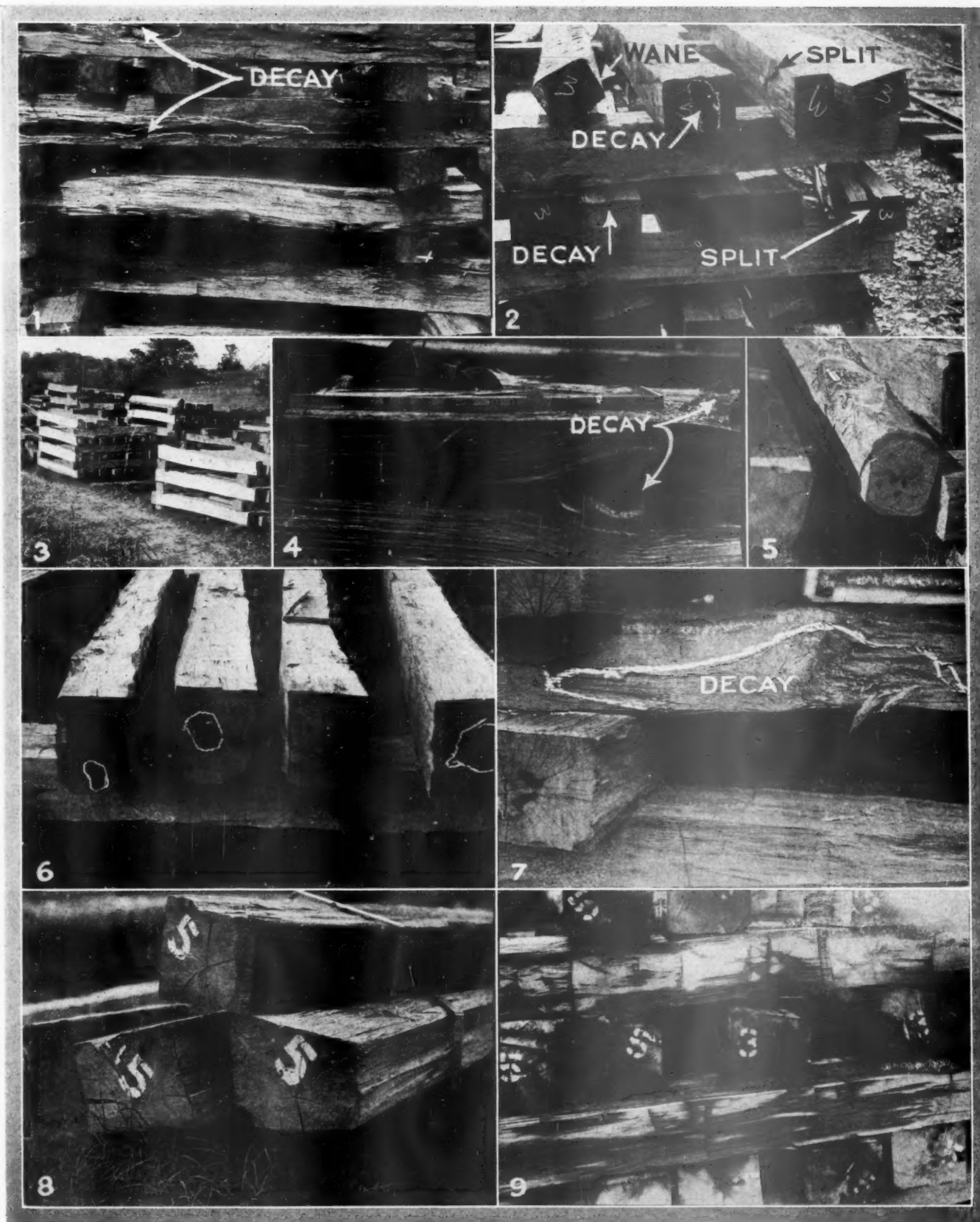
As to size, the specifications are clear and exact. They fix the minimum dimensions of each grade of ties, sawed and hewn. Thus, a grade 5 tie should be 7 in. by 9 in. in cross section and a grade 3 tie, 6 in. by 8 in., hewn or sawed, or 7 in. by 7 in. hewn. These measurements are capable of checking, yet overgrading is so pronounced in practically every large tie producing area as to make it very difficult to secure any large number of ties by those roads and producers which are adhering to these specifications.

This condition is illustrated by one of the photographs showing a pile of 35 ties which were accepted and graded by the railroad inspector as 17 grade 3 (6 in. by 8 in.) and 18 grade 5 (7 in. by 9 in.) ties, whereas accurate grading showed them to be 7 rejects (5½ in. by 7 in.), 7 grade 3 (6 in. by 8 in.), 6 grade 4 (7 in. by 8 in.) and 14 grade 5 (7 in. by 9 in.) ties. In this yard a comparison of the grading of the inspector with an accurate grading in accordance with a correct interpretation of American Railway Engineering Association specifications under which the ties were being bought showed that the road was paying a premium of



Overgrading Is Pronounced in Many Areas

1. Several companies compete for ties at most points. 2. A typical tie yard adjacent to a railway. 3. A typical example of overgrading which increased the cost of this pile over \$12. 4. A pile of 45 ties accepted as 35 grade 3, and 10 grade 2, which accurate inspection showed to grade 15 culls, 15 rejects, 5 grade 1, 7 grade 2, and 3 grade 3. 5. Ties $4\frac{1}{2}$ in. thick accepted as grade 3's. Fifty per cent of more than 7,000 ties in this yard were overgraded. 6. A pile with numerous overgraded and decayed ties, typical of more than 15,000 ties in this yard. 7. A tie $3\frac{3}{4}$ in. thick accepted as grade 3, typical of a considerable number in this yard. 8. Ties less than 5 in. thick accepted as grade 3. Note split extending almost entirely across second tie from right. 9. Tie 5 in. thick at rail base, accepted as grade 3, typical of conditions found in 5,000 ties in one yard. 10. Three ties from top of pile in one yard, all of which were less than 5 in. thick and one badly decayed, accepted as grade 3.



Evidences of Decay Are Common

1. Half of the ties in this pile are seriously decayed. 2. A pile of badly decayed and undersize ties with grades for which they were accepted indicated in white. 3. Half of the ties in this yard were decayed or undersize. 4. Decay removed from large knot under rail base and piled on top of tie. This tie was accepted for grade 5. 5. Pocket knife imbedded in decay under rail base of tie accepted as grade 3 within a week prior to taking of photograph. 6. Chalk marks indicate extent of visible decay in ends of ties. Rule indicates tie $4\frac{3}{4}$ in. thick at rail base accepted as grade 3. 7. Tie decayed for half its length and with rotten wood torn loose accepted as grade 5. 8. Poorly manufactured ties accepted as grade 5, although less than 6 in. thick. 9. Excessive wane is evidenced in many poorly manufactured ties.

\$12.30 per pile. In this same yard many ties rejected by certain purchasers because of their failure to comply with the specifications and bearing their reject marks were accepted by other producers and graded for all grades including No. 5, the best grade recognized by the specifications.

In another instance, a pile of 36 ties accepted by the chief inspector of a road as 26 grade 3 and 10 grade 5 should have been classified as 12 rejects, 9 grade 3, 3 grade 4 and 12 grade 5. At still another point, a pile of 17 ties was graded as 16 grade 3 and 1 grade 5, although 12 of them were so badly shattered as to make it questionable whether they were worth inserting in the track.

The overgrading of ties which are too thin to comply with the specifications for even rejects is particularly pronounced in many areas. The specifications fix the minimum size of the smallest standard or grade 1 tie as 6 in. by 8 in., although they permit the acceptance of ties with a minimum thickness of 5½ in. at the rail base as serviceable rejects. One of the photographs shows a tie only 5 in. thick at the rail bearing or one-half inch less than that permitted as a reject yet graded as a No. 3. This is typical of the grading given a large proportion of the more than 5,000 ties in one yard visited in which the ties were inspected only a few days prior to the making of the photograph. In another instance in this vicinity, more than 3,000 ties rejected by one producer for failure to comply with the specifications for any grade and bearing his reject marks were shipped to a large eastern road as grade 3's. This condition has become so pronounced in some areas that the tie makers have asked tie contractors to mark only those ties which are accepted, as a reject mark interferes with their sale to other buyers.

Even more pronounced was an instance observed with sawed ties where all of these ties had been sawed accurately to dimensions of 6 in. by 8 in. (A.R.E.A. grade 3), yet were accepted promiscuously as grade 3 and grade 5, although of identical size and piled side by side. Over 5,000 such ties were graded in this manner in one yard. In another yard producing largely red oak ties of which there were 7,000 awaiting shipment, a check inspection revealed at least 50 per cent to be overgraded and many accepted with defects which should have led to their rejection.

With such laxity in inspection, it is to be expected that restrictions regarding manufacture will be equally lax. Thus, one photograph illustrates ties accepted as No. 5's (the best grade recognized by the specifications), although when adzed to produce a proper rail bearing, their depth will be reduced to such an extent that they will barely comply with grade 3, and they are typical of hundreds in this yard. Likewise, many ties with excessive wane are accepted above what they will measure when squared up.

The effect of accepting ties as complying with grades higher than those to which they rightfully belong is to raise the price. Thus, the acceptance of a grade 3 tie as a grade 5 and paying a grade 5 price for it does not change the size of the tie, but merely results in paying a grade 5 price for a grade 3 tie. The effect of this is indicated by a check which was made of a pile of 34 white oak ties taken up by a contractor for a central western road as 1 reject, 2 grade 1, 2 grade 2, 13 grade 3, 2 grade 4 and 14 grade 5 ties, whereas the accurate application of the A. R. E. A. specifications would have culled eight ties and accepted the rest as 16 grade 1, 1 grade 2, 5 grade 3, 2 grade 4 and 2 grade 5 ties. The overgrading of this pile by the contractor was equivalent to increasing the prices for that pile 21 cents per tie.

Of equal seriousness is the laxity of inspection as regards decay. It is commonly recognized that the presence of decay in a tie reduces its service life and its value, yet thousands of ties which have lain in the woods or tie yards for months and even years have been accepted recently even when it was known that their life would be greatly curtailed. Likewise, decay in ties cut more recently is being ignored, as is evi-

denced by the photographs of representative ties taken in yards over a wide area. In some yards visited over half of the ties were either decayed or much overgraded. In certain areas much of the oak timber now being cut into ties is diseased and the ties are thus decayed when cut. While these ties are being rejected on this account by some roads, they are being accepted freely by others. As a result, the woodsmen are cutting this timber in large quantities while they can find a market for it. Although this form of deterioration is readily apparent in the untreated tie, as is shown by the outlines in chalk in several of the photographs, it is not so apparent after the ties have been treated. As an indication of the prevalence of this difficulty 3,000 ties rejected by one producer at a single station were accepted and graded by another without any penalty for this decay, a practice which is being duplicated at many points.

While one cannot deny any road the privilege of buying any grade of ties which it desires and of classifying them as it sees fit, the difficulty arises from the fact that the influence of such action is not confined to the road in question but extends to all other roads buying in this area. This is particularly true in those sections where the ties are produced in small quantities by woodsmen who bring them to the nearest shipping point and sell them to the highest bidder. In most instances, buyers for several companies compete for these ties and in times such as these when the companies are forced to meet each other's prices grade for grade, that company which practices the most liberal grading is in effect paying the highest price and secures the ties. The effect on the tie contractor, who grades strictly according to the specifications, is to curtail his purchases to the point where he in turn is unable to fill the requisitions of those roads which desire specification ties. Thus, one prominent eastern road, which buys its ties in the southeast and which has adhered rigidly to the specifications, has found its supply practically shut off because of the fact that other roads buying in this territory are accepting freely as graded ties those which it has refused to accept even as rejects. In another instance, a large road tapping one of the largest producing areas in the southwest, which has been buying according to specifications, has been forced to suspend purchases along portions of its own lines because of the demoralization which has been introduced by contractors acting for other roads who are overgrading the ties to such an extent as to make the specifications of little value.

Such practices result to the detriment of the roads as a whole in several ways. In the first place, they are encouraging the production of many ties of inferior grade which will not yield adequate service and will, of necessity, increase the cost of track maintenance. Furthermore, the classification of a tie as of a grade to which it does not belong demoralizes the industry and prevents the roads which desire ties adhering to specifications from securing them. On the other hand, if all of the roads would adhere literally to the specifications which they have adopted, the woodsmen would cut ties which would conform to those specifications, the production of inferior ties would be discouraged and the production of specification ties would be stimulated by the payment openly of prices which are now being paid through subterfuge and overgrading.

This condition, which is as old as the tie producing industry, points to the necessity for the enforcement of the uniform specifications with a uniform inspection which will be fair alike to consumer and to producer and which will be enforced uniformly in times of heavy as well as of slack demand. An inspection of this character, enforced by all roads purchasing in a given area, would insure the maintenance of standards of quality, production being stimulated by increasing the price sufficiently to bring out the ties. With a uniform inspection a tie producer could proceed to cut and to treat ties during slack periods when prices were low.

Practice Growing of Paying Old-Age Pensions

Forty-seven Roads Have Regular Pension Systems and Twenty-two Others Pay Pensions

LAST FALL the *Railway Age* canvassed the railroads to find the extent to which they were paying old-age pensions and the conditions under which the pension systems were conducted. For various reasons it was impossible to secure and compile the complete information promptly. It must be understood, therefore, that the figures given in the following article refer to data which were largely gathered prior to the present calendar year.

The number of roads having regular pension systems has steadily increased. In March, 1910, the *Railway Age Gazette* published an article, similar to this one, in which it listed 22 American railway systems which at that time maintained pension systems.

With the exception of the Baltimore & Ohio, all the roads shown in the table base their pensions on a percentage of the employee's earnings, multiplied by the number of years that he had been in service. For instance, if the rate is 1 per cent, a man who had been in the service of the road 40 years would receive a pension equal to 40 times 1 per cent of his average salary for the 10 years preceding retirement. The usual rate is 1 per cent, departures from this being noted in the article. Pensions are in most cases charged to operating expenses. Some of the roads reserve the right to vary the rate of pensions if the total requirements for any one year demand more than a predetermined gross amount. It is doubtful, however, if this right has been exercised; at least no instances of this kind have come to our attention.

All of the companies in counting time, include years of service under other companies bought by or consolidated with the present one. Short breaks in the service, not due to any fault of the employee, or due to a minor fault, involving suspension, are generally overlooked. All of the roads permit pensioners to engage in another business if it does not conflict with the interests of the railroad company. The stipulation that the pension regulations do not give any employee a right to his job is practically universal, as is the clause forbidding a pensioner to assign his claim. Voluntary retirement from the service cuts off the employee from all claim to a pension.

Those roads which have fixed age limits for new employees include modifications to provide for the employment of persons temporarily, irrespective of age, for a period not exceeding six months, and this period may be extended if necessary to complete the work for which they were originally employed. Persons may also be employed, irrespective of the age limit, where the service to be rendered requires professional or other special qualifications. It is also specifically stated in some of the regulations that the age limits for retirement do not apply to executive officers.

The following notes will be of interest in studying the tabular data:

Arizona Eastern.—This road has recently adopted a pension system and as yet details of the regulations are not available; it closely approximates the pension system on the Southern Pacific.

Atchison, Topeka & Santa Fe.—The rate on which pensions are based is $1\frac{1}{4}$ per cent for each year of service, on the first \$50 of the highest average monthly pay during any consecutive 10 years, and three-fourths of 1 per cent on the excess of such pay above \$50. In exceptional cases of long and unbroken service with a first-class record, the board of pensions may, with the approval of the president, increase by not exceeding 25 per cent, the amount of any pension allow-

ance authorized. There is no official age limit in the employment of new men in the service, but those men entering it who are 50 years old, or over, are not eligible for pensions.

Atlantic Coast Line.—A stipulation is made that no pension allowance shall be paid to any person for a period during which time he may be receiving accident or sick benefits from the relief department. The service requirement in the case of employees incapacitated for further service who have not reached the age of sixty-one years is twenty years instead of ten.

Baltimore & Ohio.—The fund for the payment of pensions is derived wholly from the contributions of the company, but only those employees who have been members of the relief feature or of the Baltimore & Ohio Employees' Relief Association for four consecutive years are entitled to receive a pension. The basis for computing it is calculated in accordance with the extent to which the employee participates in the support of the relief department, and not according to the amount of pay that he has received from the company.

Bessemer & Lake Erie.—See United States Steel.

Buffalo, Rochester & Pittsburgh.—The basis for computing pensions is for each year of service 2 per cent of the average monthly pay for 10 years next preceding retirement. Any employees who have received injuries in the performance of their duties, which totally incapacitate them for further service, without regard to age or length of service, may be awarded a pension in such amount and for such length of time as the president may determine.

Central of Georgia.—While the required length of service in order to be entitled to a pension in the case of women employees who have become unfitted for further work is 20 years, and for men 25 years, the board of pensions may consider an application for retirement and pension by any employee unfit for duty who has been continuously in the service for not less than 15 years, and award a pension of such amount and for such length of time as may seem best.

Delaware & Hudson Company.—Arbitrary pension allowances were made to old or incapacitated employees from 1887 until the present system was inaugurated. Employees unfitted for their duties, if they have reached the age of 65 and have been at least 25 years in continuous service, are pensioned, but this rule is not strictly adhered to and, in special cases, employees who have been retired for incapacity and are under 65 but have given 25 years of service, or employees who are 65, but have not been in the service for 25 years, may be recommended for consideration by the Board of Managers.

Delaware, Lackawanna & Western.—The pension board has power in case of faithful employees who have received injuries which permanently unfit them for their regular or other work, to award a pension and decide upon the amount to be paid.

Duluth & Iron Range.—See United States Steel.

Duluth, Missabe & Northern.—See United States Steel.

Elgin, Joliet & Eastern.—See United States Steel.

El Paso & Southwestern.—The rate is $1\frac{1}{2}$ per cent, computed on the usual basis.

Florida East Coast.—An allowance is made of 2 per cent of the average regular monthly pay received for the 10 years immediately preceding retirement.

Fort Worth & Denver City.—Employees who have reached 70 years of age are not compelled to retire if they wish to

remain in the service, if in the judgment of the board of pensions, after an examination, they are fitted to do so.

Grand Trunk.—The first American railway pension system was that of the Grand Trunk (1874), which, however, at the time applied only to a small class of employees. Since 1908, when the present system was adopted, the pension benefits have been made available to all employees. While it is intended that all employees shall be retired on reaching the age of 65 years, the pension committee may, upon recommendation of the superior officer, approve the continuance in

employees, but anyone employed above the age of 50 years shall not be eligible for pension.

Great Northern.—Employees reaching the age of 70 who are able to perform their work or other work suited to their physical or mental condition that may be available, may remain in the service if they elect to do so. Employees who have attained the age of 65 years may retire at their own option. In unusual circumstances, where special permission has been obtained from the vice-president in charge of the department, an inexperienced person over 35 years of age,

American Railroads Maintaining Regular Pension Systems

A large number of other systems, which pay pensions but do not have a regular organized pension system, are noted at the end of this article.

	Year established	Age of retirement			Incapacitated employees		Approximate number of employees	Approximate number of pensioners	Approximate annual expenditure	Age limit for new employees			
		Compulsory	Optional	After years of service	Age requirement	After years of service				Minimum pension	Maximum pension	Inexperienced	Experienced
Arizona Eastern	1923	..	..	..	..	..	..	..	..	..	..	..	..
Atchison, Topeka & Santa Fe	1907	..	65	15	..	15	63,000	622	\$186,884	\$20	\$75	..	..
Atlantic Coast Line	1904	70	65*	10	61	10	22,500	160	..	15	..	35	45
Baltimore & Ohio	1884	..	65	10	..	10	65,000	1,214	367,795	..	..	..	..
Bessemer & Lake Erie†	1911	70‡	65‡	25	..	15	..	37	..	12	100	..	..
Boston & Albany	(See New York Central Lines)												
Buffalo, Rochester & Pittsburgh	1903	70	65	20	60	20	4,600	88	47,975	25	75	35	45
Central of Georgia	1917	70	..	25	..	20-25§	8,200	72	31,200	25	..	35	45
Chicago & North Western	1901	70	..	20	..	20	..	1,190	439,985	..	..	..	..
Chicago, Burlington & Quincy	1922	..	70	20	..	25	..	..	..	25	150	..	..
Chicago, Rock Island & Pacific	1909	70	65*	20	..	25	40,000	439	205,000	20	150	35	45
Chicago, St. Paul, Minn., & Omaha	1906	70	..	20	..	20	8,700	258	98,000	12	..	..	35**
Cleveland, Cinn., Chicago & St. Louis	(See New York Central Lines)												
Colorado & Southern	1922	70	65*	20	..	25	..	..	..	25	150	..	..
Delaware & Hudson	1908	..	70	..	65	25	15,000	214	86,000	..	..	..	40**
Delaware, Lackawanna & Western	1902	70	..	25	60	25	20,500	457	205,000	25	..	..	..
Denver & Rio Grande	1917	70	65*	20	..	25	11,000	92	47,338	20	150	35	45
Duluth & Iron Range†	1911	70‡	65‡	25	..	15	..	14	..	12	100	..	..
Duluth, Missabe & Northern†	1911	70‡	65‡	25	..	15	..	11	..	12	100	..	..
Elgin, Joliet & Eastern†	1911	70‡	65‡	25	..	15	..	25	..	12	100	..	..
El Paso & Southwestern	1914	..	65	15	..	15	3,000	9	3,600	20	50	35	50
Florida East Coast	1916	70	..	10	..	10	..	..	..	..	..	..	..
Fort Worth & Denver City	1922	70	65*	20	..	25	2,500	3	..	25	150	..	..
Fort Worth & Rio Grande	(See St. Louis-San Francisco)												
Grand Trunk	1908	65	..	15	60	20	37,500	943	297,922	16.66	..	..	..
Great Northern	1916	70	65	20	..	25	..	164	..	25	75	35	45
Gulf, Colorado & Santa Fe	(See Atchison, Topeka & Santa Fe)												
Illinois Central	1901	70	..	25	..	20-25§	60,000	..	260,248	25	..	..	45**
Lake Superior & Ishpeming	1920	70	65	25	60	25	600	2	..	18	100	..	..
Long Island	(See Pennsylvania System)												
Michigan Central	(See New York Central Lines)												
Minn., St. Paul & S. Ste. Marie	1910	70	65	15	..	15	13,700	124	38,992	15	..	35	45
Missouri Pacific	1917	..	70	25	..	25	..	230	132,000	25§§	75	35	40
Nashville, Chattanooga & St. Louis	1914	..	70	10	61	10	..	..	..	..	..	..	45**
New York Central Lines	1910	70	..	10	..	20	130,000	3,000	1,098,000	10	250	..	..
New York, Chicago & St. Louis	1914	70	..	10	..	20	6,800	212	50,000	5	200	..	..
Norfolk & Western	1917	70	65	25	..	20	23,400	459	181,035	20	..	..	..
Northern Pacific	1922	70	65	20	..	25	30,000	..	..	25	..	35	45
Northwestern Pacific	1912	70	65*	20	61	20	2,400	23	10,000	..	..	35	45
Pennsylvania System	1900	70	..	..	65	30	216,000	7,017	3,336,000	15	..	..	45**
Philadelphia & Reading	1902	70	..	30	65	30	27,000	501	214,898	..	..	..	35**
Pittsburgh & Lake Erie	(See New York Central Lines)												
St. Louis-San Francisco	1913	70	65*	15	..	20	22,000	..	78,318	20	150	..	..
San Antonio & Aransas Pass	1903	70	65*	20	61	20	2,300	22	..	..	..	35	45
Southern Pacific System	1903	70	65*	20	..	20-25§	79,000	1,072	513,867	..	..	35	45
Toledo & Ohio Central	(See New York Central Lines)												
Union Pacific System	1903	70	65*	20	..	20-25§	42,500	662	313,596	25	..	35	45

*Applies only to locomotive enginemen and firemen, conductors, flagmen and brakemen, train baggagemen, yardmasters, switchmen, bridge foremen, etc.

**No distinction between experienced or inexperienced workers.

†United States Steel and Carnegie Pension Fund.

‡Applies to men only. The compulsory age for retirement of women employees is 60 years, and they may retire, if they wish, at 55 years.

§Twenty years of service applies to women employees, 25 years to men.

§§A temporary increase of 25 per cent has been authorized, due to increased cost of living.

the service of the company of any employee for such further period as the committee may determine. Any employee after 10 years of continuous service, incapable of continuing his service because of injuries received while actually at work for the company may receive the regular pension allowance so long as his incapacity continues. Employees aged 50 years or upwards, and who have been for 15 years or upwards in the continuous service of the company, may on their discharge, otherwise than for misconduct, be considered eligible for pensions or allowances. No age limit is set for new

or an experienced person over 45 years of age may be employed, but such person is required to sign a pension waiver acknowledging that he is not eligible for any pension.

Illinois Central.—In special cases the service requirement applying to employees unfit for further service, may be deviated from, the board of pensions having power to award to an employee who has given faithful service for at least 15 years, a pension for such length of time as may be determined upon.

Lake Superior & Ishpeming.—Employees who have

reached the age of 70 and who are able to continue their work, are permitted to do so upon special recommendation of their superior officer. The pension board may in its discretion grant pensions to employees unfitted for further service who have been 20 years in the employ of the company, instead of the 25 years required in most cases. The regulations also apply to all employees of the *Munising, Marquette & Southeastern*.

Minneapolis, St. Paul & Sault Ste. Marie.—It is the purpose to retire employees who have attained the age of 65 years; but provision is made, that the pension board, with the approval of the president, shall have power to retain in the service anyone who has reached this age, if in its opinion it is in the interest of the company so to do. Such retention, however, is not to extend beyond the period when such employee shall have attained the age of 70 years, except with the further provision that any employee who shall elect to remain in the service after that time, shall forfeit all claim to a pension, unless such election to remain in the service shall for each and every year after the employee attained the age of 70 years, have been first approved by the president, board of directors or the pension board. The above, however, does not apply to officers elected by the board of directors.

Missouri Pacific.—There is no compulsory age limit for the retirement of employees, but the company reserves the right to retire them at any time when in its opinion they are unable to perform the duties assigned to them. In addition to the minimum allowance of \$25 a month, on account of the increased cost of living, the board of directors has increased the monthly allowance of all pensioned employees 25 per cent, to remain in effect until discontinued by them.

New York Central Lines.—Anyone entering the service after the attainment of 45 years of age is not eligible for a pension.

New York, Chicago & St. Louis.—While the amount of pension is computed on the basis of the average monthly pay received for the 10 years next preceding retirement, exceptions may be made in the cases of employees who are transferred to less remunerative positions as a result of partial disability with the express sanction of the board of pensions. That body may rule that upon the subsequent retirement of such employees from service, the pension allowance shall be computed from the average monthly pay received for the 10 years next preceding such transfer. No person who enters the service after the attainment of 45 years of age shall be eligible for the payment of a pension.

Norfolk & Western.—In exceptional cases the president may, in his discretion, enlarge the scope of the pension rules so far as employees and not officers are concerned. An employee who is a member of the company's relief fund and who while permanently incapacitated becomes eligible for a pension, is retired with a pension and ceases to receive benefits from the relief fund. If his pension allowance is less than his relief benefits, his pension allowance is increased to that extent; that is, to the full relief fund benefit for the remainder of 52 weeks, and to half of that amount thereafter.

Northern Pacific.—While the regulations call for the retirement of employees at 70 years, in exceptional cases an employee mentally and physically capable of satisfactorily performing his duties may, upon his application, properly approved and authorized by the president or the board of directors, be retained in the service beyond the age of 70 years; provided that the pension rights of such employees retained beyond the age of 70 years shall, upon retirement, be computed upon the basis applicable when he attained his seventieth year. Common and unskilled laborers over 35 years may be employed, but are not eligible to the benefit of the pension system. Regardless of age, employees who have

been in the service of the company for 25 years and are unable to further perform their work, may be retired and pensioned. Only 20 years of service is required of employees between 61 and 65 years of age who are unable to continue their work.

Northwestern Pacific.—Officers and men under 61 years of age who have been 25 years or more in the service, and all women employees who have been 20 years or more in the service, who have become permanently disabled, may be retired and pensioned.

Pennsylvania.—In the case of employees retired at the age of 70, the rules do not specify any required length of service, but evidently 25 years are required, since no new employees are taken in the service over 45 years of age, except for special work.

Philadelphia & Reading.—Irrespective of age or length of service, a faithful employee of the company who has received injuries in the performance of his duty which totally incapacitate him for his regular or other vocation, or through sickness becomes so incapacitated, may be awarded a pension, for such sum and length of time as the president may determine. In special cases the age limit for employment is increased to 45 years.

Southern Pacific System.—The figures given in the table cover the entire Southern Pacific Lines, including the properties in Texas and Louisiana. Disabled employees who have given 25 years of service may be retired and pensioned regardless of age. Only 20 years of service is required of those who are between the ages of 61 and 70.

Union Pacific System.—The pension regulations apply to all employees of the *Union Pacific Railroad*, the *Oregon Short Line* and the *Oregon-Washington Railroad & Navigation Company*. A pension system for the *Los Angeles & Salt Lake*, conforming in detail to the existing *Union Pacific* rules, is being formulated. As in the case of the *Southern Pacific*, disabled employees between the ages of 61 and 70 may be pensioned after a service of twenty years instead of twenty-five.

The *United States Steel & Carnegie Pension Fund* was established by the joint action of the *United States Steel Corporation* and *Andrew Carnegie*, and began operations on January 1, 1911. The plan embraces all employees of subsidiary companies, including the *Bessemer & Lake Erie*, *Duluth & Iron Range*, *Duluth*, *Missabe & Northern* and *Elgin, Joliet & Eastern*. The regulations provide that at the request of their employing officers persons employed in executive or administrative positions may be allowed to continue in active service after reaching the ages for compulsory retirement.

Other Roads Paying Pensions

The following roads do not have regularly organized pension systems, the practice in most instances being to take up each case on its merits, as it arises, and to grant pensions when length of service is sufficient, or on account of inability satisfactorily to render service because of age or injuries received in service: *Ann Arbor*; *Bangor & Aroostook*; *Boston & Maine*; *Central of New Jersey*; *Central Vermont*; *Chesapeake & Ohio*; *Chicago & Alton*; *Chicago & Eastern Illinois*; *Erie Railroad*; *Gulf & Ship Island*; *Kansas City Southern*; *Lehigh & Hudson River*; *Lehigh & New England*; *Lehigh Valley*; *Louisville & Nashville*; *Maine Central*; *Minneapolis & St. Louis*; *Missouri*; *Kansas & Texas*; *New York, New Haven & Hartford*; *Richmond, Fredericksburg & Potomac*; *Southern*; *Toledo, Peoria & Western*.

Of the foregoing, the following roads are planning to inaugurate regular pension systems as soon as possible: *Ann Arbor*; *Central Vermont*; *Chicago & Eastern Illinois*; *Missouri*; *Kansas & Texas*, and *Richmond, Fredericksburg & Potomac*.

Boston & Maine.—Employees who have been in the service of the company for 30 years or more and have become incapacitated for further work receive a pension of 1 per cent, with a maximum of 40 per cent, of the average monthly wage during the last 10 years of service. There are now about 407 names on the pension roll, about \$14,000 being paid each month in pensions.

Central Railroad of New Jersey.—All employees who have attained the age of 70 are retired and those who have been in the service continuously for 30 years are pensioned. All employees 65 to 69 years of age, inclusive, who have been continuously 30 years or more in the service and have become incapacitated, are retired and pensioned, and provision is also made for those who receive permanent injuries, or through sickness so contracted, are unable to perform their duties. In the latter cases the president determines the amount of the pension and the length of time it shall be paid. The rate on which regular allowances is based is the usual 1 per cent of the average regular monthly pay for 10 years next preceding retirement.

Chesapeake & Ohio.—Employees reaching 70 years of age, and in meritorious cases, under that age, are pensioned after 20 years of continuous service. The rate is the usual 1 per cent. There are approximately 23,000 employees and the number of pensioners is about 150; the total amount paid for pensions during the year 1921 was approximately \$80,000.

Lehigh Valley.—The practice of paying pensions was established some years prior to 1897. There are now about 122 pensioners, the total number of employees being 21,982.

Louisville & Nashville.—Since 1901 this road has made it a practice to pension employees incapacitated by reason of age or ill health. The minimum amount paid is \$15 a month, the basis for computing pensions being 1 per cent. The total number of employees receiving such allowances at this time is about 265, the total amount paid per month about \$9,500 and the total number of employees is about 43,450.

Maine Central.—The regulations in effect permit the pensioning of employees who have reached the age of 65 years and have been at least 20 years in the service of the company. Special investigation is made in the case of employees who have become unfit for work. The rate is 1 per cent. At present there are 84 pensioners, who are paid an aggregate amount of \$28,862 a year. The approximate number of employees is 5,800.

New York, New Haven & Hartford.—The practice is to give employees who have served continuously, at least 30 years, and are certified by one of the company's physicians as being unfit for further service, a pension allowance computed on the usual basis of 1 per cent. The maximum allowance is 40 per cent, no matter whether the employee has worked a longer number of years or not. The rule requiring 30 years' continuous service is rarely set aside and the board of directors passes on all applications. Occasionally, however, when the service has been too short or there has been a break in its continuity and the circumstances cannot permit a pension, a gratuity is given. These are sometimes also granted to widows of employees fatally injured in the company's service and to employees who are seriously injured and prematurely incapacitated for labor. Pensions are granted as gratuities, and the company reserves the right to call upon any pensioner for any service which he is physically and mentally able to perform, and to take into consideration the pension being paid as part of the payment for such special service. The present practice was established in 1893. The approximate number of employees at this time is 35,000, and the number of pensioners about 635. The pension payroll for the year which ended on December 31, 1921, amounted to \$243,185.

A Briton's Caustic Comments on American Train Service

IN A RECENT ISSUE of the *Railway Gazette* (London) a correspondent traveling in this country sets forth some of his impressions of the passenger service on American railroads. In the belief that the opinions expressed may prove of interest to the American railroad man, and not because of a belief in the fairness of these opinions, we quote this correspondent in part as follows:

"To a Briton, the American railroads are a mystery. In some respects they beat us, but on balance the palm goes to the British railways. The railway stations, especially the terminals, are magnificent. Nothing in Great Britain can compare with the Grand Central or Pennsylvania stations in New York or the railway depots of Detroit, Cleveland, Washington or other great American cities. The architecture is superb and the finish put into the buildings leaves one in amazement. Marble, wrought bronze and other luxuries are freely used to enhance the internal decoration. Britain has much to learn in this respect.

"When it comes to railroad comfort, the main line companies of England, Scotland and Wales can show a clean pair of heels. The sleeping accommodation which is provided is grotesque. The passengers have the maximum amount of discomfort at by no means the minimum fare. Men and women are herded together in each of these cars, which by day are just long open cars with green plush cross-seats the whole length of the car, with a center gangway. Each pair of seats on either side pulls out into a bunk at night-time, whilst a companion bunk unfolds from the ceiling. At night each bunk is curtained off and by means of acrobatic contortions the passenger is able to undress behind this primitive screen. The atmosphere of these cars is very bad.

"No smoking is allowed on any of the American trains except in a small caboose at the end of the train, democratically labelled 'Men,' and which is complete with lavatory, three wash-basins, one spittoon and two settees of American cloth. The cost of meals on these trains is high. A breakfast of tea, rolls and butter, and jam costs one dollar, equivalent to about 4s. 6d. Luncheon will cost about 7s. 6d. and dinner about 10s. So much for prohibition, which forces up the prices of food at hotels and on dining cars, as there is no profit obtainable now on liquors in this home of freedom.

"The engines and rolling-stock would bring discredit upon any company in Britain. Dirt seems to be the watchword. Paint, soap and water are displaced by grime and rust, yet it is noteworthy that the engine drivers and firemen invariably wear gloves at their work. The running of the coaches, however, is much smoother than in England, due undoubtedly to the longer and heavier rolling-stock. Automatic couplings are constant throughout passenger and freight cars—but as regards the former I noticed much jarring when starting. Another source of annoyance to the British passenger is the incessant ringing of the cow bells when passing through towns. To hear a dozen engines at a busy station clanging these bells at night is an irritation which savors to the sophisticated Englishman as a form of wanton torture. . . ."

THE SOUTHWESTERN CLAIM CONFERENCE has arranged for a short course on transit crop diseases to be held at the State College of Agriculture and Mechanics, College Station, Tex., in the week beginning July 23. It is to be conducted by Dr. J. J. Taubenhause, chief of the division of plant pathology and physiology of the Bureau of Plant Industry of the U. S. Department of Agriculture.

Revenue Car Loadings Break All Records

REVENUE CAR LOADINGS for the week ended June 30, totaling 1,021,770, were the largest in the country's history, and approximately 3,000 cars in excess of the previous record of 1,018,539 reported for the second week of October, 1920. The loadings for the week ending June 30 exceeded the million mark for the fourth consecutive week and made the loadings over a million for five out of the last six weeks. The previous record in 1923 was for the week ending June 26, when the loadings totaled 1,014,029, this being the first of the 1923 million-car weeks.

The loadings for the week ending June 30, were 158,925 in excess of the total of the corresponding week of 1922, and

245,691 in excess of the total for the corresponding week of 1921. Increases were shown in all commodities over the 1921 total except in grain and over the totals for the corresponding week of 1922 except in grain and l.c.l. The grain loadings for the week ending June 30, 1923, totaled 37,127, which total was 4,434 less than for the corresponding week of 1922 and 3,567 less than the total for the corresponding week of 1921. L.c.l. loadings for the week ending June 30, were 1,704 less than in 1922, but 28,402 greater than the total for the corresponding week of 1921. The increase in miscellaneous loadings was 33,581 as compared with 1922 and 93,994 as compared with 1921.

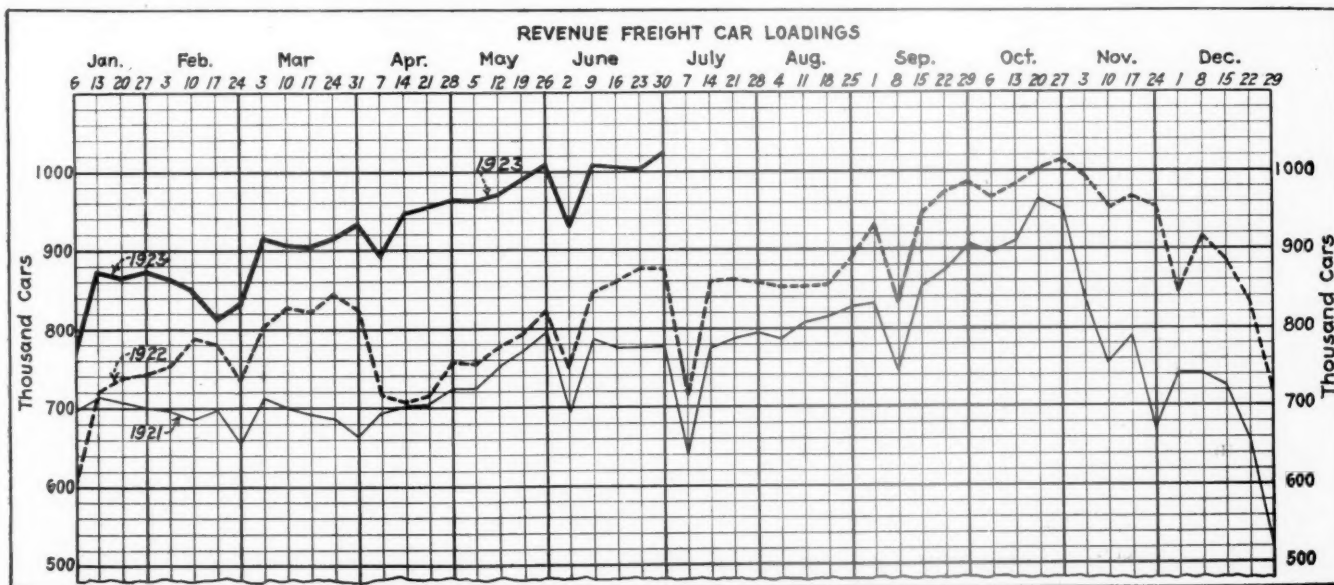
Increases in the loadings as compared with the previous week of 1923 were shown in all districts and in all commodities except coke, for which there was a reduction of less than 100 cars.

REVENUE FREIGHT LOADED

SUMMARY—ALL DISTRICTS, COMPARISON OF TOTALS THIS YEAR, LAST YEAR, TWO YEARS AGO. WEEK ENDED SATURDAY, JUNE 30, 1923

Districts	Year	Grain and grain products	Live stock	Coal	Coke	Forest products	Ore	Mdse. L.C.L.	Miscellaneous	Total revenue freight loaded		
										Corresponding period		
Eastern	1923	6,575	2,740	53,994	3,911	7,251	9,250	67,391	98,747	249,859	.....	.....
	1922	9,966	2,794	7,859	2,084	5,389	7,125	70,195	91,388	.....	196,800	188,398
Allegheny	1923	1,957	2,344	58,381	7,474	3,806	15,958	49,513	86,352	225,785	.....	.....
	1922	2,277	2,648	18,629	4,752	3,157	11,213	51,666	75,541	.....	169,883	155,659
Pocahontas	1923	208	123	26,210	449	2,059	198	6,367	4,935	40,549	.....	.....
	1922	169	145	31,331	254	1,489	29	6,465	4,111	.....	43,993	35,294
Southern	1923	3,510	2,098	21,187	1,248	23,045	1,562	38,819	40,564	132,033	.....	.....
	1922	3,452	2,108	22,641	1,276	19,058	1,264	37,055	37,633	.....	124,487	112,152
Northwestern	1923	9,962	9,694	8,400	1,073	21,906	50,310	32,701	37,490	171,536	.....	.....
	1922	10,285	8,231	5,563	1,578	17,684	42,702	31,420	34,090	.....	151,553	114,935
Central Western	1923	10,308	10,980	13,467	452	13,290	3,025	35,634	55,517	142,673	.....	.....
	1922	10,727	10,282	5,304	270	7,593	2,312	35,434	49,872	.....	121,794	112,886
Southwestern	1923	4,607	2,700	4,118	138	7,892	488	14,496	24,896	59,335	.....	.....
	1922	4,685	2,124	2,942	151	7,348	410	14,390	22,285	.....	54,335	56,755
Total western districts	1923	24,877	23,374	25,985	1,663	43,088	53,823	82,831	117,903	373,544	.....	.....
	1922	25,697	20,637	13,809	1,999	32,625	45,424	81,244	106,247	.....	327,682	284,576
Total all roads	1923	37,127	30,679	185,757	14,745	79,249	80,791	244,921	348,501	1,021,770	.....	.....
	1922	41,561	28,332	94,269	10,365	61,718	65,055	246,625	314,920	.....	862,845	776,079
Increase compared	1922	.....	2,347	91,488	4,380	17,531	15,736	.....	33,581	158,925	.....	.....
	1921	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Decrease compared	1922	4,434	.....	.....	.....	.....	.....	1,704	.....	.....	.....	.....
	1921	.....	6,155	28,644	10,354	31,684	50,025	28,402	93,994	245,691	.....	.....
Decrease compared	1921	3,567	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
June 30	1923	37,127	30,679	185,757	14,745	79,249	80,791	244,921	348,501	1,021,770	862,845	776,079
	1922	33,958	29,251	183,350	14,828	78,068	82,041	240,403	340,841	1,002,740	866,321	775,447
June 23	1923	33,903	28,461	187,009	15,167	78,058	79,298	241,947	343,410	1,007,253	848,657	775,328
	1922	34,390	32,723	190,149	14,804	76,380	76,092	242,766	345,945	1,013,249	836,208	787,283
June 16	1923	32,340	29,399	171,248	14,389	73,637	73,390	216,386	321,252	932,041	739,559	693,903
	1922	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Compiled by the Car Service Division, A. R. A.



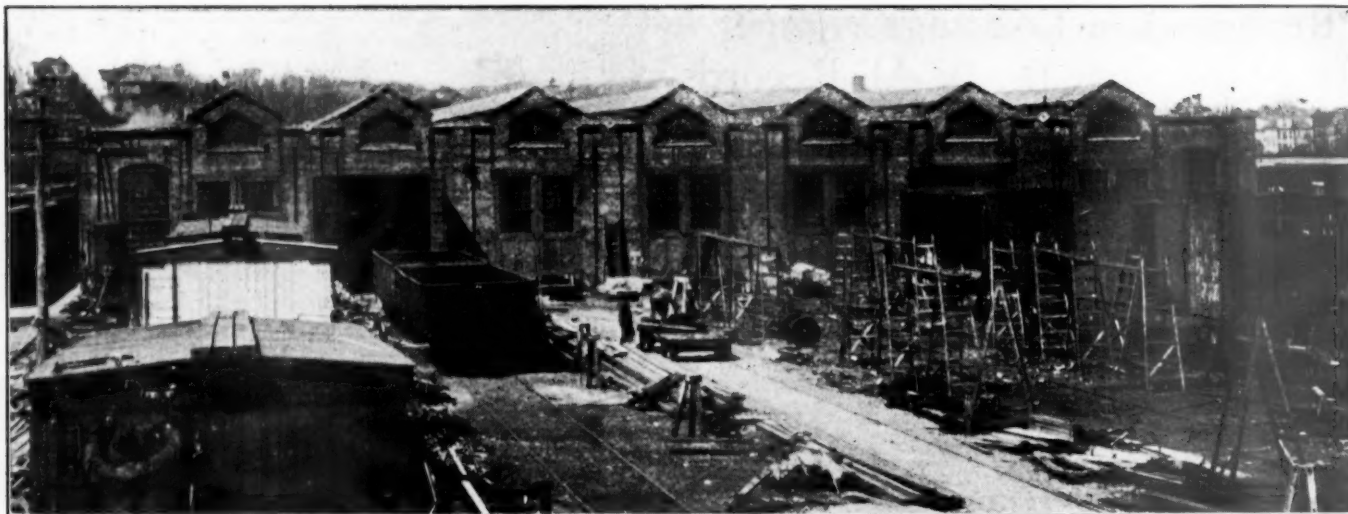


Fig. 1—The Freight Car Shop Proper Is a Substantial, Well-Lighted Brick Building. (View from East Yard)

Unit System of Repairing Freight Cars

Good Results Secured at the Readville Shops with the Unit,
or Station to Station, Method

THE READVILLE freight car shop of the New York, New Haven & Hartford, in common with other railroad shops throughout the country, was almost completely disorganized July 1, 1922, at the time of the strike. The average pre-strike force (230 men) and monthly output (221 cars) were both practically wiped out. By February, 1923, or in a period of eight months, the freight car shop organization had been rebuilt and the force expanded to 320 men, an increase of 39 per cent; the output had been built up to 362 cars, or an increase of 64 per cent.

A Fine Showing

This relatively greater increase in output than in the number of employees is especially creditable in view of the fact that the new men were largely inexperienced and had to be trained in their work by the limited number of foremen and leaders who remained loyal to the railroad. Readville is primarily a heavy repair shop, 50 per cent of the bad-order cars received at this point being practically rebuilt and 45

per cent given more or less extensive repairs. For example, probably not over 5 per cent of the posts and braces of the cars are saved. Practically all the sheathing and roofing is renewed. Fifty per cent of the posts and braces are cut up and re-used for jack posts and belt rail. New sills, reinforced ends and brake beams are applied; also new shoes for the posts and braces. An increase of 64 per cent in production, as against 39 per cent in force, is therefore a particularly good showing.

Unquestionably, one of the most important contributing factors in the good results accomplished at Readville has been the unit system, or station to station method of repairing freight cars, sponsored by H. C. Oviatt, general mechanical superintendent, and installed and enthusiastically supported by the local shop supervision under the direction of F. E. Ballda, superintendent of shops. Under the operation of this system, the output showed a practically continuous increase from July, 1922, to February, 1923, and has remained at a uniformly high level since that time. Approximately 350

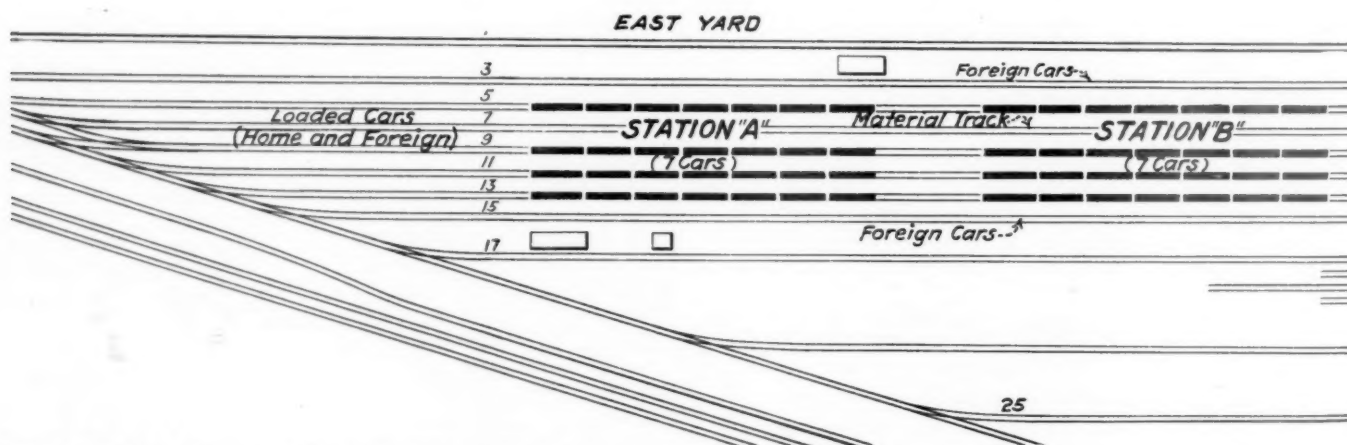


Fig. 2—General Layout of Readville Freight Car Shop and East and West Yards—Positions of Seven-Car Units at Various Stages of Repair Indicated. (See Facing Page.)



Fig. 3—Cars at Station "A" Receive Repairs to Trucks, Underframes, Couplers, Etc.

freight cars a month are being turned out and this represents one way in which the New Haven is energetically attempting to improve its car equipment condition.

A detailed analysis of the freight car output at Readville is given in Table I which shows both the types of cars handled and classes of repair given. Class 1 repairs shown in this table in all cases amount practically to rebuilding and involve not less than 200 man-hours of labor. Normally Class 1 repairs mean anything over 72 man-hours; Class 2 repairs,

March, 1923—

Class 1.....	166	1	2	...	8	6	183
Class 2.....	17	3	4	...	2	...	26
Class 3.....	81	46	7	1	4	1	140
Class 4.....	2	2	...	...	...	...	4
Total.....	266	52	13	1	14	7	353

April, 1923—

Class 1.....	125	1	35	...	2	4	167
Class 2.....	11	9	10	...	...	...	31
Class 3.....	85	66	10	...	1	1	163
Class 4.....	...	...	...	...	...	...	...
Total.....	221	76	55	...	4	5	361

TABLE I—ANALYSIS OF FREIGHT CAR OUTPUT AT READVILLE SHOP

November, 1922—

Kind of repairs	Box	Coal	Flat	Type of car			Total
				Ballast	Refrig.	Caboose	
Class 1.....	93	...	4	...	11	4	112
Class 2.....	13	...	3	...	...	...	16
Class 3.....	46	28	6	...	...	...	80
Class 4.....	14	15	5	...	...	...	34
Total.....	166	43	18	...	11	4	242

December, 1922—

Class 1.....	93	...	5	...	10	8	116
Class 2.....	14	1	2	...	2	...	19
Class 3.....	50	32	8	1	3	...	94
Class 4.....	3	3	1	1	1	...	9
Total.....	160	36	16	2	16	8	238

January, 1923—

Class 1.....	123	...	1	...	5	13	142
Class 2.....	12	5	5	...	...	...	22
Class 3.....	57	47	7	1	1	...	113
Class 4.....	6	6	2	...	...	...	14
Total.....	198	58	15	1	6	13	291

February, 1923—

Class 1.....	148	...	1	...	...	6	155
Class 2.....	21	3	3	2	...	...	29
Class 3.....	90	64	18	...	...	...	172
Class 4.....	3	3	...	...	...	...	6
Total.....	262	70	22	2	...	6	362

36 to 72 man-hours; Class 3 repairs, 20 to 36 hours, and Class 4 repairs, less than 20 man-hours. Referring to the table, it will be noted that by far the great majority of the work is done on box cars, most of which receive Class 1 repairs. The number of Class 3 repairs in February, however,

TABLE II—SPECIALIZED GANGS ON FREIGHT CAR WORK

Character of work	Number of men
Stripping cars	9
Air brakes	12
Truck and couplers.....	24
Steel cars and steel underframes.....	31
Superstructure and roofs.....	139
Painting	12
Foreign car repairs.....	73
Laborers	23

was unusually high (172) and this probably accounts for the record output of 362 cars in a short month.

How the Unit System Works

The making of similar repairs to a large number of freight cars of the same type probably first suggested the possible economy in the unit system, or station to station method as it

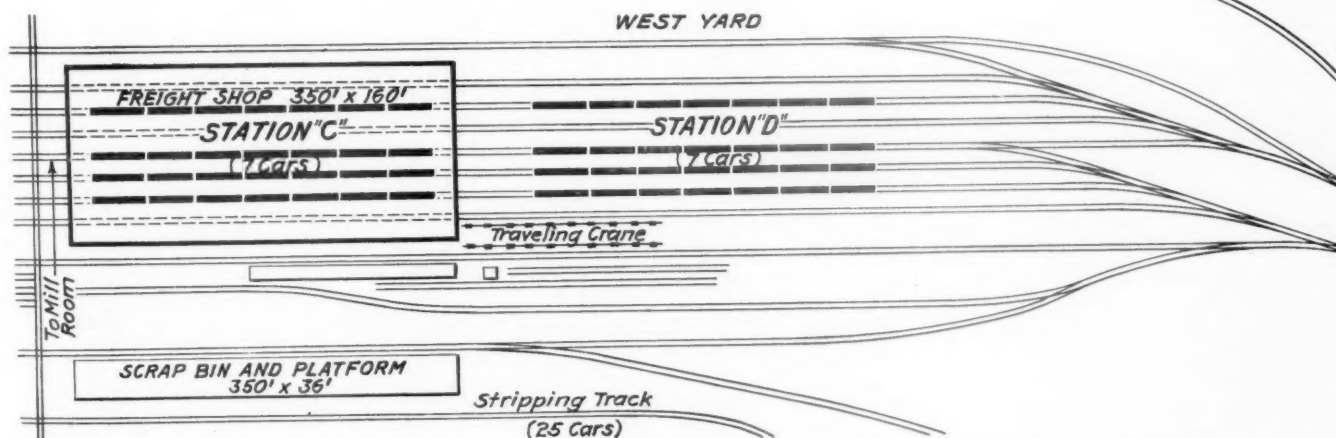


Fig. 2—General Layout of Readville Freight Car Shop and East and West Yards—Positions of Seven-Car Units at Various Stages of Repair Indicated. (See Facing Page.)

is sometimes called. Briefly, this system, as employed at Readville, consists of repairing the cars in units of seven, selected so far as possible by serial number, and advancing these units through the various stages of repair from stripping to weighing and stenciling, seven cars at a time. This enables specialized gangs to be used on various phases of the work which was a particularly important factor immediately following the strike because new men could be more quickly trained for special jobs than for all-around car repair work. (Table II shows the specialized gangs and the number of men in each.) In addition to specialization with the resultant speeding-up of the work and reduced cost, the unit

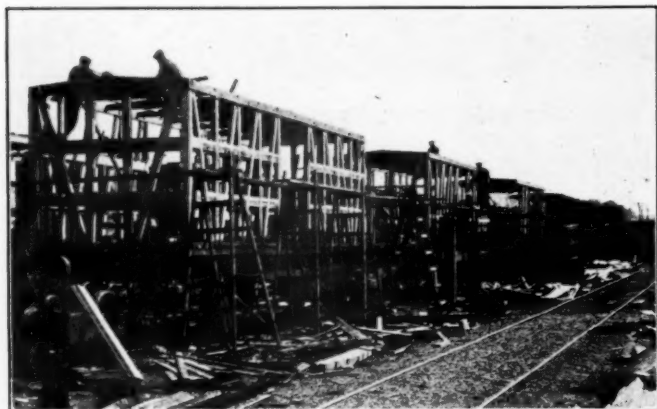


Fig. 4—Superstructure Work Is Done at Station "B"

system enables material to be handled in quantities directly to the points of application, saving time and labor. The entire operation of the shop is put on a more orderly basis with a favorable effect on output.

The general layout of the freight car shop and the east and west yards at Readville is shown in Fig. 2 with the four stations of repair indicated at "A," "B," "C" and "D." It will be noted that the freight shop, a brick building 160 ft. wide by 350 ft. long, is located between the East and West Yards, forming Station "C" in the order of operations. Tracks 3, 5, 7, 9, 11, 13 and 15 extend through the shop, Track 7 being kept clear for the delivery of material. A transverse track to the millroom, blacksmith shop and machine shop is indicated by the arrow. Track 25, known as the stripping track, extends west of the shop to a large vacant lot which is used as a dump for the burning of wood and debris from wrecked and scrapped cars. Any material having scrap value is readily segregated and moved back to the scrap bin and platform shown in Fig. 2 just north of the shop.

When a string of bad-order cars is received at Readville, it is run out on Track 25 to the dump and the cars stripped with the exception of ladders and grab irons which must be left for safety in movement. An important step taken at this time is the inspection for broken sills and ordering of necessary material in advance. The cars are then classified so far as possible by serial number and moved in units of seven to Station "A" in the east yard. Here the operation of stripping is completed and all repairs are made to trucks, underframes, couplers, etc., as shown in Fig. 3. This work is done by a special gang which, through careful instruction and training, has become expert on this particular phase of the work. It will be noted that only four seven-car units can be accommodated at Station "A," since Track 7 is held open as a material track and Tracks 3 and 15 are devoted to the repair of foreign cars. The section of the east yard between the ladder and Station "A" is used for making light repairs to loaded cars, both home and foreign. The way in which Track 7 is kept clear for handling material is plainly shown in Figs. 1, 3 and 4.

Each seven-car unit, as the work is completed on it at Station "A," is moved to Station "B" in the east yard where the floors are repaired, post and brace shoe pockets applied and all the superstructure repaired or renewed, as shown in Fig. 4. More men are used on repairing superstructure and roofs than on any other branch of the work, the division of men between the different specialized gangs being indicated in Table II.

From Station "B" the respective units are moved to Station "C" which is the freight shop. Here grain slides are repaired, the lining inside and out applied and ladders and safety appliances put up. Sheathing and roofs are applied in the shop; also doors, running boards and one coat of paint. This is to prevent damage from swelling in the event that cars are run out of the shop and exposed to dampness or rain, before final painting. Air brake work, such as cleaning and oiling cylinders, changing triple valves and making necessary brake adjustments, is also done in the shop. The work at Station "C" is illustrated in Fig. 5.

The last movement of the seven-car unit is to Station "D" in the west yard where a final inspection is given the cars, the second coat of paint applied and the cars stenciled and weighed. Air is provided in this yard for spraying the trucks, and if it is stormy, the cars are transferred to Track 15 inside the shop where the painting is done under cover. A string of cars completed and ready for service is shown in Fig. 6.

Economy in Milling and Handling Lumber

An important advantage of the unit system is the saving in milling and handling of lumber used on the cars. The selection of seven-car units, as far as possible of the same series, gives longer runs on the same size stock in the millroom with resulting economy. Running boards are milled in carload lots of 22,000 ft. Posts, braces and sills are milled

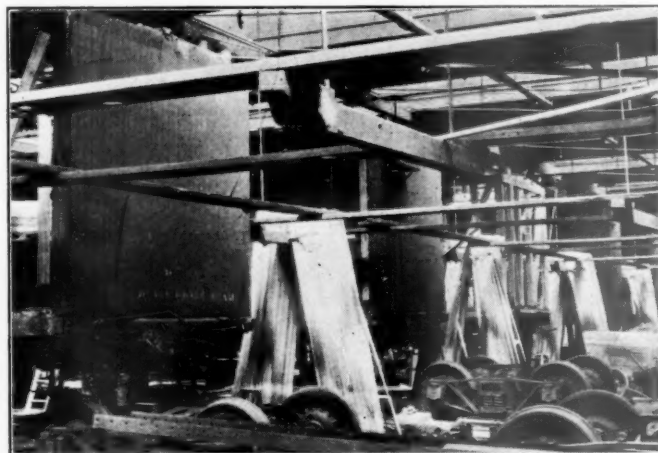


Fig. 5—A Feature of the Work at Station "C" (in the Shop) Is the Orderly Piling of New Sheathing and Roofing within Easy Reach

with fewer changes in machine set-up and with an important saving in the time of laying out these parts. Sheathing and roofing are not milled at Readville but are bought in 9-ft. and 5-ft. 2-in. lengths, respectively. Both the sheathing and roofing are cut off with a portable power saw after application to freight cars. The bottoms of all posts and braces, also side sills are creosoted, the creosote being applied with a brush.

Lumber, machined to the required size and shape for standard material, is handled on push cars over the standard gage track from the millroom and over material delivery Track 7, being piled as near as possible to the point of use. In the shop (Fig. 5) material racks are placed on both sides

of each car of a size sufficient to hold 154 pieces of sheathing, the average car taking 150 pieces. Roofing racks are large enough to hold roofing for a single car. In general, there is no back movement of this material. It is handled by laborers and left in orderly piles where it can be reached by the repair men with the least possible effort. When a unit of

be loaded at the convenience of the material handling foremen and moved by power to their destination.

Machines in the Freight Car Shop

Adjacent to Track 15 in the shop is a rip saw and gage for rabbeting. In addition, cut-off saws enable considerable re-



Fig. 6—At Station "D" the Seven-Car Units Receive a Second Coat of Paint; Are Stencilled; and Given a Final Inspection

seven cars has been advanced one station, the preceding station is cleaned and material piled in readiness for the next unit and there is no question as to the effect of this orderly handling of material in speeding-up car movement.

In addition to the push cars, a tractor and trailer system is used at Readville to handle material, such as wheels, couplers and other heavy parts, proving a great time and labor-saver. This tractor, illustrated in Fig. 7, is particularly useful in view of the short-turning radius available. The front and back wheels track one another, being connected by crossed tie rods which cause the rear wheels to swivel the same amount and in the opposite direction to the front wheels, greatly decreasing the space required for turning. It is obviously difficult or impossible to back with this arrangement, but any number of trailers within reasonable limits can



Fig. 7—An Effective Storage Battery Tractor and Trailer System Is Used

clamation work to be carried on in this end of the shop. Old sheathing, defective at one end, is cut up so that the good portions are re-used. In addition, much hand sawing is eliminated in view of the accessibility of the rip and cutting off saws. Light caboose and refrigerator cars are repaired on Track 3 in the shop building.

In addition to air pressure for the operation of pneumatic



Fig. 8—Two Paint Spraying Pits Greatly Facilitate the Painting of Trucks and Underframes

tools in the east yard, oxygen and acetylene gas pipes are provided so that the cutting and welding torch can be used at any point in the yard. Air is provided in the west yard for paint spraying trucks and for a pneumatic hoist which proves extremely valuable in changing wheels on light repair cars. One end of the car is lifted at a time when the wheels can be readily changed. Track 17 is reserved for this work. Both home and foreign steel cars are repaired at Readville,

although most of this work is done at the New Haven's steel car repair shops at Norwood, Mass.

Paint Spraying Pits a Good Investment

The underframes of steel cars, as well as the trucks, are spray painted, this work being usually done at two drop pits recently installed adjacent to the transfer table in the passenger department, as shown in Fig. 8. These pits greatly facilitate spray painting the trucks and underframes of cars and have already more than repaid the cost of constructing them. Both air and gas are piped to the pits, the trucks and underframes being painted in a fraction (one-tenth) of the time which would be required with a brush. Possibly one-fifth more paint is used but this paint covers many places which it would be difficult or impossible to reach with a brush. The pits are located between the transfer table and the paint shop and are also used for burning off old floors of passenger cars, keeping the smell out of the shop.

Foremen Must Instruct New Men

There are three foremen, two assistants and three leaders in the freight car department at Readville. These men, therefore, have on an average 40 men apiece under their personal direction and the only means so far developed for instructing new men is by personal contact. Foremen's meetings are held once a week for the purpose of studying the progress of the work and ironing out any differences between the various foremen, also getting after material and parts which are delayed.

In conclusion, it may be said that under the unit system of repairing freight cars described, the entire operation of the freight car department at Readville has been put on a more orderly and systematic basis, with a reduction of confusion and lost effort, and a decidedly favorable effect on output, as shown.

Trainmen Meet to Discuss Wage Increases

THE WESTERN general chairmen of the Brotherhood of Railway Trainmen and the Order of Railway Conductors met in Chicago on July 9 and 10 to discuss plans for a campaign for increased wages next fall when most of the agreements with the roads expire. W. M. Doak, vice-president of the Brotherhood of Railway Trainmen represented that organization in the absence of W. G. Lee, president, who was unable to attend on account of illness. President L. E. Sheppard of the Order of Railway Conductors led the members of his organization.

Representatives of the Brotherhood of Locomotive Engineers and the Brotherhood of Locomotive Enginemen and Firemen were not in attendance at the session, indicating the break among the "Big Four" brotherhoods. Warren S. Stone, president of the Brotherhood of Locomotive Engineers explained the absence of his organization with the statement that a conference on wage matters at this time is unnecessary. "It does not take this much preparation to get ready for a wage movement when the time arrives and the financial conditions of the country warrant it," Mr. Stone declared.

It has been common knowledge that for some time Mr. Lee and Mr. Stone differed emphatically in their views relating to the policies to be pursued by the "Big Four" brotherhoods. In this controversy, the Order of Railway Conductors has sided with the trainmen, while D. B. Robertson, president of the Brotherhood of Locomotive Enginemen and Firemen has favored the stand of the engineers' organization. This year the break has resulted in the trainmen's and conductors' organizations calling their own conferences

for the consideration of a move for increased compensation, the first of which was held in Chicago. On July 23 the southern association of general chairmen of the two brotherhoods will meet at Washington, D. C., and a like conference will be held by the eastern association of general chairmen at Cleveland, Ohio, on August 9.

On the second day of the conference the delegates voted to urge the members of their organizations to request wage increase of from 60 to 64 cents a day. Such increase if granted would restore the rates in effect May 1, 1920. The reductions to the present basis was made by the Labor Board decision of July, 1921, when the peak wages of 1920 were cut 60 cents a day in passenger train service and 64 cents a day in freight train service.

New Wage Increase Awards

Clerical employees on the Baltimore & Ohio have been granted increases, effective July 1, ranging from 1 to 2½ cents an hour. The New York Central has granted an increase of 3 cents an hour to its signal maintainers and signal mechanics and their assistants and an increase of 4 cents an hour to helpers in the signal department. Truckers and checkers on the Pittsburgh & West Virginia and West Side Belt have received an increase of 3 cents an hour. Maintenance of way laborers on the same road also received an advance of 3 cents an hour.

The Brotherhood of Railroad Signalmen has presented applications to the Labor Board for increases in wages of the signalmen it represents on a number of roads, including the Minneapolis, St. Paul & Sault Ste. Marie, the Chicago, Indianapolis & Louisville, the Missouri-Kansas-Texas, the Central of Georgia, the Michigan Central and the Southern. The new wage rates which are requested on most of the lines involved are as follows: Gang foremen, \$1 an hour; leading signalmen and signal maintainers, 90 cents an hour; signalmen and signal maintainers, 85 cents an hour; assistant signalmen and signal maintainers, 62 to 75 cents an hour, depending on length of service, and helpers, 60 cents an hour.

The American Train Dispatchers' Association has applied to the board for the following rates for chief dispatchers and dispatchers on the Louisville & Nashville, the Southern and the Missouri Pacific; chief dispatchers \$350 a month; assistant chief dispatchers, \$325 a month and trick dispatchers, \$300 a month. On the Texas & Pacific rates of \$325 a month for chief dispatchers, \$300 a month for assistant chief dispatchers and \$275 a month for trick dispatchers are asked. Telegraph department employees on the Kansas City Southern and Texarkana & Ft. Smith, represented by the Brotherhood of Railroad Telegraphers, have appealed to the board for increases averaging 6¾ cents an hour.

Shopcrafts Hit by Labor Board

The Railroad Labor Board in two decisions published on July 10, held that the federated shopcrafts, in arbitrarily suspending work on July 1, 1922, withdrew from all previous agreements relative to rules and working conditions, and abrogated them. These decisions were rendered in disputes between federated shopcrafts and the Minneapolis, St. Paul & Sault Ste. Marie and the Hocking Valley. On these roads local associations of shopmen were formed in November of last year and agreements as to working conditions and rules were entered into. The Federated shopcrafts maintained that the agreements between itself and the two roads are still alive notwithstanding the agreements reached with the "company" associations. The Labor Board, however, held that the federated shopcrafts had arbitrarily nullified all previous agreements and declared that the negotiations between the roads and their new associations legally and properly superseded the earlier agreements. These decisions constitute a precedent which will probably have a far-reaching effect on future disputes in which strikes are involved.

Canadian National Improves Position in 1922

Deficit Still Heavy, However—Recent Co-ordination of System Promises Greater Savings

THE GRAND TRUNK and its subsidiary, the Central Vermont, were consolidated with the Canadian National in February of this year, uniting under one management a route mileage of 22,538, the largest of any railway in the world. A great part of this mileage is not justified economically—there is not sufficient traffic at present or in immediate prospect to make it pay. The government-owned railways had a deficit after fixed charges of \$60,251,845 in 1922 and the Canadian National, excluding the Grand Trunk, failed by \$11,085,081 to earn operating expenses.

At first sight the task confronting the management may seem almost hopeless, yet there are certain aspects of the situation which make it appear in a somewhat more favorable light.

In the first place, the future of the properties has for some time been rather uncertain and until the government's policy could be determined and put into effect, no important changes could be brought about. Now, however, with the absorption of the Grand Trunk, and the operation of the properties as a unified system, important changes looking toward greater efficiency of operation are being undertaken. Competition between lines formerly under separate direction but now a part of the Canadian National is being done away with. Stations, shops and terminals of formerly competitive lines are being consolidated. At Long Lake in Ontario, north of Lake Superior, a short connecting line is being built between the lines of the National Transcontinental and the Canadian Northern, both of which are now parts of the Canadian National. From this connecting line eastward the line of the Canadian Northern is the shorter and westward to Winnipeg the National Transcontinental is the shorter route. The completion of this connecting line will, therefore, give the system a much shorter transcontinental route for through business. Complete unification and the abolition of duplication of facilities cannot be secured in a short time but it is well under way and should be effective in reducing materially the deficit of the system. Some of the improvement in the results obtained on the lines which in 1921 and 1922 were included in the Canadian National System may be attributed to bringing into use physical improvements—the result of the carrying out of an extensive betterment program.

A Business—Not a Political—Administration

Another aspect of the government railway situation in Canada which has its favorable side is the extent to which business methods have been applied in its solution. It is, of course, impossible to keep the politicians absolutely at bay when such a tempting opportunity for meddling as a government railway is afforded them. However, the railway is so managed and organized as to take a large part of the force out of most political pressure before it can do any serious damage.

The operation of the railway is entrusted to a non-partisan board of directors, appointed by the government to represent the whole country territorially and economically. The actual authority which the board has is exercised by its chairman, who is president of the company. It is pertinent to notice that the system is organized much after the fashion of a private company and that it is so referred to by officers and employees. The company has its freight solicitors, it pays local taxes, it competes with other railways for business just as a privately operated railway. There is nothing of the

bureaucratic in the organization of the Canadian National Railways. From the president on down the road is officered and manned by railroad men, most of whom were in the service of the constituent companies before the amalgamation.

The management has shown its appreciation of the importance of cordial relations with its employees and the public. There has been no let-down in employee discipline but the dealing between representatives of the employees and the management have so far been happy and free from suspicion and restraint on either side. The management's appreciation of the importance of public relations work is shown by the fact that the head of this department reports only to the president.

Construction for Development Purposes

In sum then, the C. N. R., forced to operate many lines which do not pay, is faced with a serious problem, but one which with unified and efficient management will doubtless become less serious. Ultimate success, *i.e.*, the operation of the system lines at a profit, seems a long way off. That will probably not come until growth in population and industry bring paying traffic to lines used now far below their capacity. Canada has never expressed herself as favoring government ownership—but government ownership followed inevitably the construction of lines which did not pay. These lines make possible the settlement and development of undeveloped lands and if the people choose to tax themselves to pay for railways built for development purposes, that is a problem of national economy which statesmen and not railway operating men will have in the end to solve.

Financial Results

The Canadian National Railways, including the Grand Trunk and the Central Vermont, in 1922 had a deficit after fixed charges of \$60,251,845 as against \$72,662,278 in 1921, representing an improvement of \$12,410,433. The Grand Trunk, including the Central Vermont, was operated separately in 1922 and was not merged into the Canadian National until early in 1923. Consequently the report of the Ministry of Railways and Canals gives separate statements for the Canadian National as constituted in 1922 (*i.e.*, Canadian Northern, Canadian Government and Grand Trunk Pacific) and for the Grand Trunk (including the Central Vermont).

In presenting the Ministry's statistics, therefore, "Canadian National" will indicate the exclusion of the Grand Trunk and the Central Vermont.

The Canadian National in 1922 had a gross operating revenue of \$120,135,957 and a net deficit from railway operations of \$9,736,318. Tax accruals totaled \$1,348,763, giving a total operating deficit of \$11,085,081. Other deductions amounted to \$4,421,180 but these were more than offset by non-operating income which totaled \$5,644,217, giving a deficit before fixed charges of \$9,862,045. This was a considerable improvement over 1921 when the net deficit from railway operations was \$16,220,336 and the deficit before fixed charges was \$16,212,063.

Fixed charges on Canadian Northern and Grand Trunk Pacific securities amounted to \$41,241,252, an increase of \$463,337 over the previous year. This brought the total deficit for the Canadian National for the year 1922 to a total of \$51,103,296 as against \$56,989,979 for 1921.

The Grand Trunk had gross operating revenues of \$113,-

975,133 and a net from railway operations of \$13,929,867. The deduction of taxes, uncollectible revenues and equipment and joint facility rents brought this total down to \$9,740,293, an increase of \$9,001,639 over the previous year. Other net income brought the total net income before fixed charges up to \$12,064,827 as against \$3,573,284 in 1921. Fixed charges amounted to \$16,467,613, an increase of \$329,450, showing a deficit after fixed charges of \$9,148,548, which however, was an improvement of \$6,523,751 over the previous year.

Some Interest Payments to Government

The total deficit of \$60,251,845 experienced by the Canadian National and the Grand Trunk does not indicate a call on the public treasury for that entire sum inasmuch as some twenty-three millions of it represent interest payable by the railways to the government on securities held by it.

The railways, excluding the Central Vermont, in the current year up to May 31, have earned a gross of \$93,910,945, an increase of \$12,372,545 over the same period last year. Operating expenses for the same period were \$93,444,471—an increase of \$8,630,642. Net amounted to \$466,474—an increase of \$3,741,903.

Freight traffic on the Canadian National, excluding the Grand Trunk and the Central Vermont, increased somewhat in 1922 over the previous year. Passenger traffic fell off slightly. Net ton-miles totaled 11,470,240,340 and passenger miles 689,391,942, showing an increase of 10 per cent in the former and a decrease of 5 per cent in the latter. Revenue ton-miles on the Grand Trunk totaled 6,341,677,948, an increase of 13 per cent over the previous year and revenue passenger miles totaled 597,916,068, a decrease of 4 per cent. The Central Vermont carried 369,128,541 revenue ton-miles during the year, an increase of 24 per

Grand Trunk and some important statistics usually given in the reports of railroads in the United States are omitted. The company is, however, at work on the development of a new system of statistics which will doubtless show a great improvement over those available in the annual report for 1922.

The Canadian National, including the Grand Trunk and the Central Vermont, gives employment to about 100,000 men. Its payroll figures largely in its operating expenses, the proportion in 1922 to operating revenue being 60 per cent on the Canadian National exclusive of the Grand Trunk and the Central Vermont. On the Class I railroads of the United States the labor charges took but 44 per cent of operating revenues.

The company has under order 77 locomotives, 155 passenger train cars and 4,155 freight cars, representing an expenditure of \$20,250,000. The total budget for additions and betterments for the current year is \$32,133,055. No large construction projects are planned and the money will be expended over the whole system for ballasting, bridges, buildings, machinery, signaling and the like.

A. B. & A. Introduces Tabulating Machine Checks

THE ATLANTA, BIRMINGHAM & ATLANTIC is about to introduce into its accounting and treasury office work an interesting innovation in the form of a combined tabulating machine card and pay check. By means of the method worked out the punched tabulating machine card, properly imprinted and filled out as a pay check, will be

ATLANTA, BIRMINGHAM & ATLANTIC RAILWAY CO.		PAY CHECK	
D. L. BUGG, RECEIVER ACCOUNTING DEPARTMENT		NUMBER	AMOUNT
No. <u>6040</u>		0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0
THE FULTON NATIONAL BANK OF ATLANTA		1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1
PAY TO THE ORDER OF		2 2 2 2 2 2 2 2 2 2	2 2 2 2 2 2 2 2
ATLANTA, GA. JUN 15 1924		3 3 3 3 3 3 3 3 3 3	3 3 3 3 3 3 3 3
<u>H. A. Sample</u> <u>Condi</u>		4 4 4 4 4 4 4 4 4 4	4 4 4 4 4 4 4 4
THE SUM OF \$32 AND 04 CTS \$32.04		5 5 5 5 5 5 5 5 5 5	5 5 5 5 5 5 5 5
In Full Payment for Services Rendered to Date		6 6 6 6 6 6 6 6 6 6	6 6 6 6 6 6 6 6
Not Good Unless Countersigned by		7 7 7 7 7 7 7 7 7 7	7 7 7 7 7 7 7 7
W. A. WALLACE, B. L. BELL, OR J. T. BROWN		8 8 8 8 8 8 8 8 8 8	8 8 8 8 8 8 8 8
COUNTERSIGNED		9 9 9 9 9 9 9 9 9 9	9 9 9 9 9 9 9 9
<u>A. Sample</u> AUDITOR			

DO NOT FOLD OR BEND THIS CHECK

Specimen Tabulating Machine Pay Check

cent over 1921 and 33,149,915 passenger miles, a decrease of 10 per cent.

Statistic Methods to Be Improved

The average haul in revenue freight service on the Canadian National was 450 miles and the average passenger journey was 61 miles. On the Grand Trunk similar figures were 212 and 48. On the Canadian National the average train tonnage was 548 tons, including both revenue and non-revenue freight. The statistics given in the Ministry's report are not uniform for the Canadian National and the

given to the employee and upon the return of the check from the bank will be available for the purpose of being put in the tabulating machine to check the bank balance, the semi-monthly payroll payments, etc., and at the end of the year the assorted semi-monthly checks may be added up to ascertain the individual employee's annual earnings for income tax purposes.

The illustration given herewith shows the new pay check. The method of handling the new checks is as follows:

In the auditing office the pay rolls will be verified as to extensions of each amount due, and the pay checks will be

written, number, name, occupation and amount. The key punch operator will then punch the number, amount earned and amount of check, the amount earned to be punched from the pay roll, the amount to be paid punched from pay check, the checks being handled at same time with the pay roll. The key punch operator will place stop cards so as to keep the pay checks for each roll separate. When key punching is completed the pay checks will be run through the tabulator, and the total of the pay checks for each pay roll will agree with the pay roll totals as to total amount earned and the total balance to be paid.

Pay checks will be gang punched in columns 13, 14 and 15, to show the month, year and whether for first half or last half of month; for example: A pay check dated July 15, 1923, would be punched 7-3-1; July 31, 1923, would be punched 7-3-2. The check illustrated is dated June 15, 1924, and is accordingly punched 6-4-1.

Upon the completion of these operations the pay checks will be run through the check-writer to complete them and they will then be ready for presentation to the employees.

When the paid checks are returned through the bank to the treasurer, they will be run through the tabulator to prove the amount claimed by the bank which will also be the amount credited to the treasurer.

The paid checks will be delivered to the auditor daily and kept together until the end of the month, when they will be run through the assorting machine and separated as to months, first half or last half, and set up in numerical order for convenience in stamping off paid on the pay roll. The total amount paid applying on each half-month's pay roll will also be determined from the tabulating machine. From the total pay checks for each half-month will be deducted the payments, leaving the balance unpaid, which must balance with the unpaid items on each half-month pay roll. The A. B. & A. plans to deal with each half-month's pay roll separately for the reason that the same pay check number is used for the same employee through the year. At the end of the year, the checks can be assorted so as to bring all the pay checks for each employee together and thus determine the annual earning of each employee for income tax purposes.

At the beginning of the year pay check numbers are assigned to each position on the pay roll. The Atlanta, Birmingham & Atlantic has approximately 2,500 employees and the numbers will run in four figures from 1 to 9999. To take care of changes of employees it skips from 1 to 4 numbers between each position, and also takes care of changes by prefixing one figure, in which cases the numbers would run in five figures. For example, if position No. 1 changed employee and numbers 2 or 3 were already used, it would use number 10,001, and if another change was made it would use number 20,001 and so on up to 90,001; changes for 1,250 would run as 11,250, 21,250, 31,250, etc.

U. S. Coal Commission Reports on Anthracite

A RECOMMENDATION for governmental regulation of the anthracite coal industry, backed by the assertion that coal is a public necessity, and the additional recommendation that authority should be given the President of the United States to take over the coal mines in case of a suspension of mining operations due to labor troubles, are the two outstanding features in the separate report on the anthracite industry addressed to the President and Congress, and made public on Monday of the present week.

The report is in the form of 40 large mimeographed pages, typewritten single space, and covers all angles of the production and marketing of anthracite coal with particular at-

tention to labor conditions, including such details as the wages, hours of employment, living conditions in the anthracite industry, etc. It is signed by John Hays Hammond as chairman, Thomas R. Marshall, Clark Howell, George Otis Smith, Edward T. Devine and Charles P. Neill.

In addition to the recommendations already mentioned, the committee also makes suggestions covering the publicity of accounts of the anthracite coal industry. It suggests the establishment of a uniform standard ton to overcome the difficulty, at present, of the use in the industry of both the long ton and the short ton. It suggests also that economy in production might be secured by reduction in the number of sizes of coal and larger use of substitute and supplementary fuel. It also covers the matter of inspection in quality, an adjustment of royalties, and makes various recommendations as to the matter of labor relationships with regard to wage and working agreements, etc., one of which recommendations, that relating to excessive hours, has already received attention in the form of an announcement by the operators that they expect in the near future to discontinue the twelve-hour day.

Of especial importance to the railway aspects of the situation is a suggestion that the Interstate Commerce Commission might well undertake an examination of the freight rates on anthracite coal, which recommendation has already been put into effect by the I.C.C. in an announcement that such an investigation will be undertaken in the near future.

The coal commission, in its recommendations for public regulation and for the giving of authority to the President to take over the mines in case of a cessation of operations due to labor troubles says:

"Both the Congress and the American people are concerned in the question whether in the anthracite industry a reasonable return on investment can be paid to the owners and operators, decent living conditions and an adequate wage based on American standards furnished to the mine workers, a proper return made to the railroads and the dealers, and coal be delivered to the patrons of the industry at lower prices than those now charged. Furthermore, they want to know what can be done to insure an ample supply of anthracite with a constant flow from mine to consumer. Peace with justice in the industry is the first requisite and economy is the second. To these inquiries the coal commission has directed its attention.

"The fundamental fact in the anthracite coal problem is that heretofore these limited and exhaustible natural deposits have been in the absolute private possession of their legal owners, to be developed or withheld at will, to be leased for such royalties as could be exacted, to be transported and distributed at such rates and in such manner as a double-headed railroad and coal combination might find most advantageous from the point of view of private profit, to be sold at such prices as could be maintained by the restriction of output and the elimination of independent competitors, through such means as the maintenance of freight rates burdensome except to those who, owning both mines and railroads, could afford to be indifferent as to whether their revenue came from one source or the other.

"The commission does not recommend the abolition of existing property rights, however much might be said for the view that mineral deposits should have been held from the beginning as national rather than individual property. The commission does not recommend government ownership either by purchase at present value or by expropriation. It does, however, hold the view that a limited natural monopoly like anthracite, held by a relatively small number of individuals, estates and companies and supplying the necessities of life for millions of our people, cannot continue to be treated as if it were not affected by a public interest.

"Coal is quite as much a public necessity as gas, street railway service, or any other service or commodity that has

been brought under public regulation. There should be no secrets from the public in regard to mining costs, profits, salaries, wages, or corporate relations. Banks and insurance companies are privately managed because we find by experience that they can be managed more efficiently and economically on the principle of individual responsibility. But, like railroads, they are required to report to a public authority and they are subject to such regulation in the public interest as experience may show to be necessary and public opinion may from time to time approve. The guiding principle in such enterprises is no longer maximum profit to owners but maximum service to the public.

"The time has certainly come to establish the same controlling idea in the anthracite coal industry. There is not as yet a sufficient basis in knowledge or experience to determine what form of control or regulation will ultimately be most advantageous. What is clear is that in the operation of coal mines, as in the operation of railroads, telephones, water companies, or banks, the public interest must be respected and served, and that this requirement places limitations on the rights of owners of coal lands, operators, mine workers, carriers, and dealers. The commission believes that the principle of individual and corporate responsibility should be maintained as most likely to insure economical and efficient management of the industry, and that the public interest may be adequately safeguarded by the creation of a governmental authority with power to require financial and operating reports, to prescribe uniform methods of cost accounting, and to determine conditions on which coal may be shipped in interstate commerce.

"The President of the United States should be authorized by act of Congress to declare that a national emergency exists whenever through failure of operators and miners in the anthracite industry to agree upon the terms of employment or for any other reason there is a suspension of mining operations, seriously interrupting the normal supply of anthracite fuel in interstate commerce; and to take over the operation of the mines and the transportation and dis-

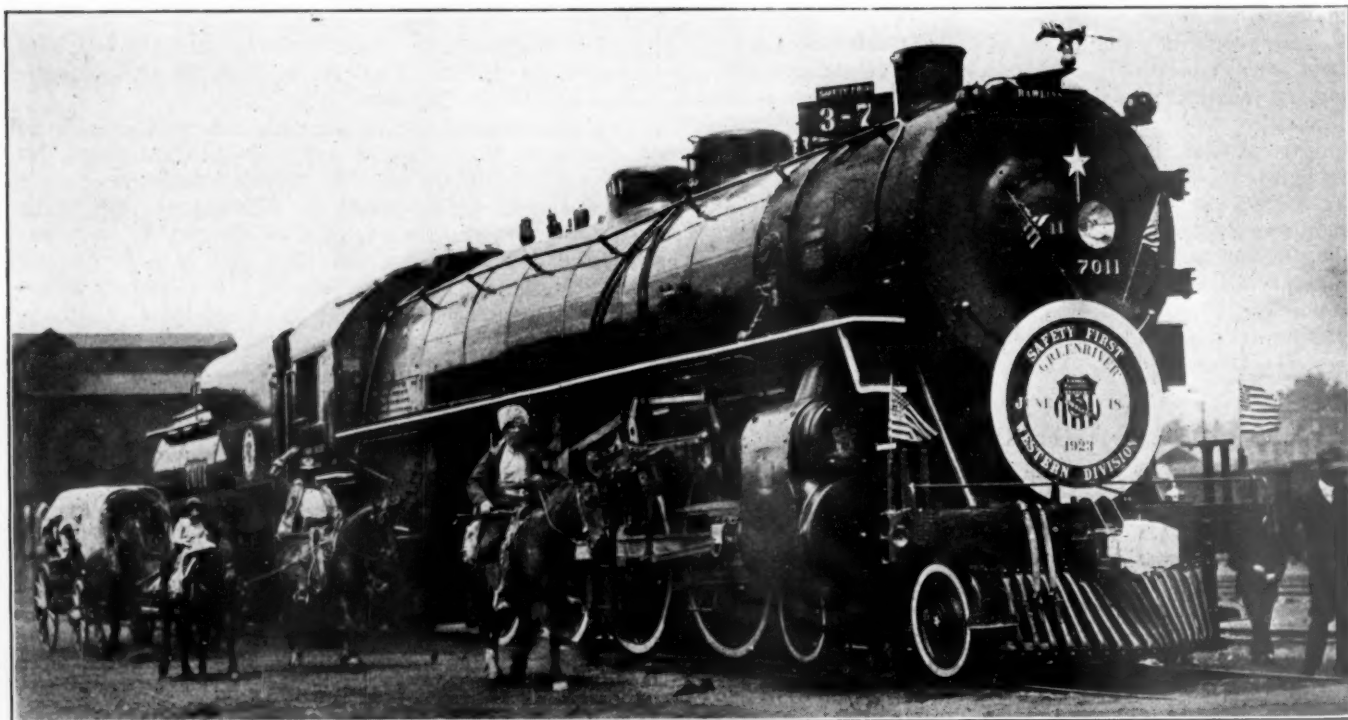
tribution and marketing of the product, with full power to determine the wages to be paid to mine workers, the prices at which the coal shall be sold, and, subject to court review, the compensation to be paid to land and mine-owners.

"On these subjects more definite recommendations will be reserved for the final report of the Commission since they apply to both branches of the industry."

The recommendations with reference to the suggested Interstate Commerce Commission investigation of freight rates reads as follows:

"The item of freight alone in certain examples cited takes from 16 to 30 cents of the consumer's dollar. The question whether or not the existing freight rates on anthracite are excessive is one that comes under the jurisdiction of the Interstate Commerce Commission. The three years' painstaking investigation of these rates by that body, on which its decision of July 30, 1915 was based, developed the pertinent fact that all the conditions in the transportation of anthracite—the vast quantities in trains of maximum tonnage and in cars of large capacity, originating with relatively large shippers—tend toward lower operating costs. More than forty years ago President Gowen of the Philadelphia & Reading referred to this traffic as 'very profitable,' and in later years anthracite has been termed by the carriers their 'backbone traffic,' throughout the history of this very desirable business, the active competition for which explains most of the history of combination.

"As so large a part of the anthracite consumer's dollar goes as freight charges, a material reduction in the price of coal might come through a reduction of freight rates. With a keen appreciation of the public demand for the scrutiny of every item in the cost of anthracite, the coal commission urges upon the Interstate Commerce Commission, the duly constituted agency of the federal government, a reexamination of the reasonableness of anthracite freight rates. The pending separation of carriers and mining companies in the three larger systems makes opportune the reconsideration of the subject by the Interstate Commerce Commission."



Underwood & Underwood

A Pageant of the Overland Trail—the Pioneer Trapper, the Pony Express, the Prairie Schooner and One of the Union Pacific's New Mountain Type Locomotives

Prospects for K.C.M.&O. Line Becoming Brighter

Danger of Immediate Abandonment Has Been Averted by
Several Recent Favorable Developments

By J. C. Emery

THE PROSPECTS for the continued operation of the Kansas City, Mexico & Orient are now brighter than they have been for years past. For several years the road has been steadily declining, and in recent months, its final abandonment has been imminent. However, efforts of those interested in the road to prevent cessation of its operation have finally resulted in the securing of concessions from connecting lines which should increase the volume of traffic on the Orient sufficiently to insure its continued operation.

The present more hopeful outlook is attributable, in the

Orient is the largest road that has faced the necessity of abandoning its line, yet its problems have been the same, on a larger scale, as those of other lines over the country which are being threatened with abandonment.

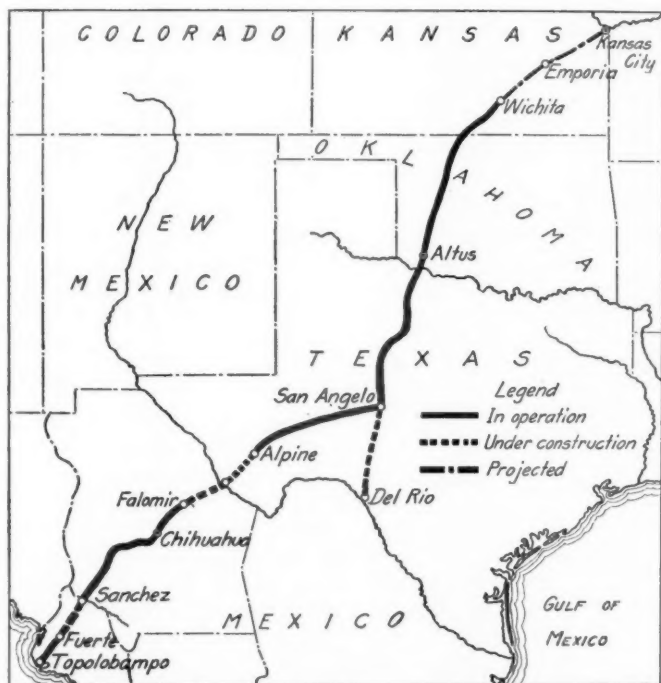
The Orient was planned and started on its career by Arthur E. Stillwell, a man with the dreams of an empire builder. In this case he contemplated two things: (1) a great railroad artery reaching from the heart of the United States into and through the undeveloped resources of Mexico, and (2) a low grade, direct line over 300 miles shorter than any other route from Kansas City to Pacific tidewater with a branch line radiating southerly through interior Mexico to Mexico City. His ambition was that the road should be representative of the people in the broadest possible way and should therefore be financed and constructed by popular subscription without the direct financial support or interest of any banking house. Although the soundness of this plan was questionable, it is a testimonial to his financial ability along unusual lines, that he raised and put into the project over \$36,000,000.

He formed a construction company and sold stock at par or above to the extent of about \$10,000,000. Later he formed another construction company, selling \$3,000,000 additional stock at par. These construction companies made contracts with the Orient by which they agreed to build the road for \$18,000 per mile in bonds, \$16,000 per mile in preferred stock and \$12,500 per mile in common stock. Mr. Stillwell was originally an insurance man, and, having no banking connections, undertook to sell the construction companies' stock to private investors. It is said that there are in the neighborhood of 4,000 stockholders in these two companies.

Early History of Orient

The Orient, as it was originally planned, was to run from Kansas City, Mo., across the states of Kansas, Oklahoma and Texas and through Chihuahua, Mexico, and Sinaloa to Topolobampo, an excellent port near the mouth of the Gulf of California. Because of the cost of a large terminal, the line was not started from Kansas City, although it had a franchise for a belt line around that city. Construction was begun on three separate pieces of road. One was from Topolobampo northeast, a second section was over the mountains in Mexico and a third began in Kansas and extended into Oklahoma. The first spike was driven on July 4, 1900, and construction was vigorously pushed after that time. Two years later 80 miles of line from Harper, Kan., to Fairview, Okla., and 150 miles of track in Mexico were in operation. In addition, steamships were in daily operation between Port Stillwell, Mex., and Guaymas, handling both freight and passengers. The growth of the line from its beginning until 1912 was steady. In 1903, for example, it was operating 232 miles of line, owned nine locomotives, 14 passenger and baggage cars and 626 freight cars, most of which were held under car trusts. The gross earnings for that year amounted to \$139,178, while its operating expenses were \$116,436. The net earnings for 1903 were \$22,742; for 1904 \$39,093; for 1905, \$60,149; for 1906, \$71,653 and for 1907, \$79,231. This condition continued until 1909, when the first of a long series of annual deficits was incurred.

It was at this time that the weakness of Stillwell's plan



The Kansas City, Mexico & Orient Lines

main, to the efforts of the Interstate Commerce Commission to bring about better co-operation with, and practical assistance from, the Orient's connecting lines. These roads have recently applied a differential to all traffic routed via the Orient to and from Gulf and east Texas points and to eastbound lumber and sugar and trans-Atlantic business. A recent oil development in Ragan County, Tex., adjacent to the Orient's line and remote from any other railroad is also encouraging.

History of the Orient

The Kansas City, Mexico & Orient operates over 1,000 miles of line, with operating revenues of nearly \$4,000,000 per year. The road, as it was conceived, occupied strategic position and had bright prospects. The project was launched only 20 years ago, yet during the latter half of this period of its existence the Orient has been sinking steadily. A succession of ill-advised policies and adverse circumstances led to its failure. For years its patrons recognized the imminent danger of its being compelled to abandon operations, and every recourse was resorted to to keep the road alive. The

became forcibly evident. Through his lack of strong financial backing the costs of terminal entrances and rights-of-way forced him to construct his line, not in a systematic, logical and complete way, but in a scattered and haphazard manner. I was his hope that as the value of the property advanced, means would be found to complete the line into its originally planned terminals, particularly at Kansas City, but this hope was not realized. The Mexican revolution also put a stop to railroad building and operation in that country, and that disaster, with accumulated troubles which had been encountered in the program in the United States, brought an end to the resources of the company.

The Kansas City Outer Belt & Electric, which was to have become the Orient's Kansas City terminal, was never constructed. It held valuable leases of land almost entirely around Kansas City and would have been of inestimable value to the Orient if the line had been completed to that point. The lease which the Orient had on this property expired a short time ago, so that any future plans for entering Kansas City will inevitably meet with difficulty.

In 1912, the four adverse years which the Orient had just passed through resulted in the appointment of a receiver for the property. The receivership proceedings were brought in the interest presumably of a committee of English bondholders. While the receivership was friendly, it was probably due to the feeling that if the road was to be put on a paying basis, a change in the method of financing was necessary. Mr. Stillwell lost active control of the property at that time and never regained it. At a foreclosure sale in 1914, the property was purchased by a new corporation known as the Kansas City, Mexico & Orient Railroad Company, with the announced intention of completing the construction of the line from Kansas City to Wichita. The purchase price, which did not include the property in Mexico, was \$6,001,000. In 1916, since only \$3,000,000 of the purchase price had been paid, the court ordered the foreclosure sale set aside and the deposit of \$24,000,000 in bonds of the original company to guarantee the balance of the purchase price. The old receivership was re-established but was shortly after discharged, and W. T. Kemper was appointed as the new receiver. The lines in Mexico have continued in the hands of the receivers, one of whom is Mr. Kemper, since 1912. The lines in Texas were reorganized on July 8, 1914, and have since continued operation as a corporation, Mr. Kemper being president.

Recent Operating Results

During 1920, operating revenues for all lines were \$3,434,301 and operating expenses \$4,678,499, leaving an operating deficit of \$1,244,198. In 1921, the operating revenues increased to \$3,988,998, while operating expenses were lowered to \$4,524,379, creating an operating deficit of only \$535,381. After deduction for fixed charges, the net deficit for 1920 was \$1,287,956 and for 1921, \$1,282,442. Statistics for the lines in Kansas and Oklahoma show that in 1920 the traffic aggregated 93,624,423 ton miles and 6,974,241 passenger miles. In 1921, the freight traffic had decreased to 87,717,000 ton miles and the passenger traffic to 4,586,000 passenger miles. The average haul of freight was 139 miles in 1920 as against 128 miles in 1921, while the average distance per passenger for 1920 was 45 miles as against 44 miles for 1921. The earnings per freight train mile in 1921 were \$4.92 and the earnings per passenger train mile for the same year were \$1.20. The fixed liabilities of the company are now \$20,000,000 of capital stock, \$25,000,000 of stock liable for conversion and \$33,500,000 of unmatured funded debt.

Present Status of Orient

At the present time the Orient operates a line 735 miles long from Wichita, Kan., to Alpine, Tex.; a line 284 miles

long from Falomir, Mexico, to Sanchez, a point some 250 miles inland from the Pacific coast, and a line 62 miles long from Fuerte, Mexico, to Topolobampo. This makes a total of 1,081 miles in operation. In addition, the company holds rights-of-way, which are theoretically under construction, for a line from San Angelo, Tex., to Del Rio, a line 161 miles long from Alpine, Tex., to Falomir, Mexico, and a line 209 miles long from Sanchez, Mexico, to Fuerte. Rights-of-way are also held between Kansas City, Kan., and Wichita, although no part of the work of construction has ever been undertaken.

One daily passenger train is operated each way between Wichita, Kan., and Alpine, Tex., the distance of 745 miles being divided into three sections and trains operated on each of them during the daytime only. The total running time of the three trains is a little over 41 hours. Irregular service is maintained between Falomir and Sanchez in Mexico, and one mixed freight and passenger train is operated daily between Fuerte and Topolobampo. The Orient connects with the Missouri Pacific, the Santa Fe and the Rock Island at Wichita, Kan., with the Ft. Worth & Denver at Chilli-cothe, Tex., with the Texas & Pacific at Sweetwater, Tex., and with the Southern Pacific at Alpine, Tex.

Its tracks in the United States are laid with 70 and 80 lb. rails, the alinement is satisfactory and the grade low, the maximum grade being 1.4 per cent. About one-fourth of the track is ballasted with cinders and gravel and is in fair physical condition. There are adequate sidings and terminal facilities. The rolling stock consists of 64 locomotives, about 1,500 freight cars and 22 passenger cars. In addition, modern work equipment, including a wrecking crane, pile drivers, steam shovel and work cars, is owned. A large locomotive and car repair shop, which cost \$750,000, is at the northern terminus at Wichita, Kan., and good repair facilities are maintained at San Angelo, Tex., with adequate engine terminals and repair machinery at all other division points.

While a small portion of the line is paralleled by competitive roads in Kansas and Oklahoma, it traverses a large and otherwise unoccupied territory in Texas, all of which is devoted to diversified farming and cattle raising. One hundred and nine towns and villages, of which a number are county seats, are located along the line of the Orient, 85 of which are served exclusively by it. In addition, approximately 25 inland towns are dependent upon the Orient for their transportation. Nearly all of the towns are small, however, and the traffic on the road has been mostly farm products and live stock originating along the line and inter-line shipments destined for patrons served exclusively by the Orient. The volume of traffic has been virtually the same since the completion of the Orient to its present size. Under ordinary conditions in the past, practically no traffic was routed over the road as an intermediate carrier.

Reasons for Failure

The reasons for the failure of the Orient to operate profitably were numerous. The primary reason was its lack of adequate financial backing which made it impossible to construct the line in a logical manner which would insure a good volume of traffic. In spite of the fact that the road, even in its uncompleted state, for some years earned its operating expenses with something over for its fixed charges, the burden imposed by its sections in operation being scattered inevitably proved too great a handicap. The fact that its northern terminus is at Wichita instead of Kansas City has resulted in the loss of through traffic which might have been received from connecting lines. Being a potential competitor of the established southwestern lines, it was compelled to depend largely upon the traffic originating locally for its revenue. Its weakened financial condition made the maintenance of its equipment and right-of-way up to the standard

of the competitive roads impossible. During Federal control its freight solicitation was entirely abolished and the Orient was used largely for the purpose of hauling empties. Traffic which was formerly carried was diverted to other lines during Federal administration, and it did not return to the Orient after government control ended. Since the resumption of private control, the management has been making such efforts as it could to rebuild the property and re-establish its former trade relations, but progress in this, while encouraging, has been very slow. The Mexican revolution prevented the operation of the line in that country, and the high cost of operation in recent years was an additional handicap to profitable operation in this country. Finally, the fact that the Orient operates through the states of Kansas, Oklahoma and Texas, which have been leaders in restrictive railroad legislation, prevented its adopting necessary means to increase its revenue, and subjected it instead to an extraordinarily onerous regulation of its income and expenses.

Good-Will of Patrons

A most encouraging feature of the Orient's history has been the whole-hearted good-will of its patrons. They have made its continued operation their special and peculiar concern and have manifested this on numerous occasions. For example, when early in the period of Federal control one of the members of the Railroad Administration suggested that the Orient should be dropped from Federal control and ought never to have been built, a strong protest went up from the people of the three states which it traverses. Farmers, ranchers, merchants, business and professional men hurried to Washington at their own expense to convince the director general and his staff that the Orient must be preserved. Their success is a matter of history.

On numerous other occasions there have been like manifestations of public support, always solidly back of the Orient and its continued operation. In 1920 it was the first carrier to be granted a loan out of the government's \$300,000,000 revolving fund. Shippers and other patrons served by the line have voluntarily submitted to increases in rates. As a result of a conference between the state commissions, taxes were remitted from time to time in all three of the states, and releases from other public burdens and obligations have also been granted. In August, 1922, the Interstate Commerce Commission granted increased divisions to the Orient amounting to from 10 to 30 per cent of divisions now received from connecting lines, but an injunction granted by the United States District Court at Denver, Colo., in October of that year prevented the carrying out of this plan, which was designed to insure the Orient's earning its operating expenses. This case is to be argued before the Supreme Court on October 1. The Labor Board last year, after hearing disputes involving the revision of wages for all the employees of the company, remanded the case to the parties in the controversy for further negotiations, suggesting that inasmuch as the Orient was in a distressing financial condition and its further operation threatened with discontinuance, every effort possible be made to settle the situation without greatly increasing the expense of the line. At a hearing on the Orient's petition for lowered wage schedules generally over its line, the board indicated its desire to favor the road as much as possible in order to prevent the calamity of its ceasing to operate.

In Texas, patrons of the line approved a plan of Lieutenant-Governor Lynch Davidson of Texas for state operation of the road. The feature of this plan was the exemption of the proposed state road from all existing Federal and state laws pertaining to the railroads. A resolution approving the plan was adopted by the Legislature of the state and sent to the Interstate Commerce Commission and to the Congress of the United States, but no action to put it into effect has been taken.

Future of the Orient

Recently the rehabilitation of the lines in Mexico has become a probability. The Mexican Government is spending some \$10,000 each month in relaying track and rebuilding bridges that were destroyed during the years of the revolution.

It is expected that 50 to 75 miles of inoperative track in Mexico will soon be restored to service. Before the revolution, the area in which the reconstruction is under way was one of the most productive in Mexico and the rehabilitation of the country should prove an important source of additional revenue to the company.

Whether or not the Orient will become a really successful road depends upon the completion of the line as it was first projected. It has been clearly demonstrated that, taken by itself, under ordinary conditions of competition, rates and wages, it cannot hope to operate profitably. Considered strictly upon its merits and its own physical resources, the Orient is capable of handling a large tonnage cheaply and in some instances more expeditiously than competing lines. This is due to its favorable grade and alinement, its shorter route and its avoidance of large and congested freight terminals. In connection with the Missouri Pacific or Santa Fe at Wichita, Kan., the Texas & Pacific at Sweetwater, Tex., and the Southern Pacific at Alpine, Tex., it forms a short and feasible route for traffic between Kansas City and El Paso, California, Arizona and New Mexico, the route being second only to the Chicago, Rock Island & Pacific and the El Paso & Southwestern in directness. Its permanent salvation lies in the completion of its original plan for a short line from Kansas City to Pacific tidewater or in its union with some strong existing line which is capable of developing its property and furnishing it with additional traffic.

Other Prospects

If the Orient system were carried out as it was conceived, it would probably become a transcontinental line of great value. As has been noted, it would provide a low grade line from Kansas City to an excellent port at Pacific tidewater, 300 miles shorter than any competitor. In addition, the projected line from San Angelo, Tex., to a junction with the National Railways of Mexico at Eagle Pass, Tex., west of Laredo, would form the shortest line between Chicago and Mexico City. The traffic possibilities of this line are great. The entire country of Mexico would naturally be tributary to its lines on traffic moving to and from Chicago and the Great Lakes. The future of Mexico as a prosperous country is only beginning to be recognized. It is a splendid source of potential rail traffic of great volume. As one of the first roads in the field, the Orient is well situated to secure much of this future business.

It is understood that there are extensive coal fields not far from Topolobampo on the proposed line of the Orient. Since steamships from Liverpool bound for Asiatic points via the Panama Canal will pass close to Topolobampo to benefit by the short sailing route, they might be expected quite naturally to make that town a port of call. If the coal properties in Mexico on the line are developed, vessels might well be coaled at Topolobampo rather than at the Isthmus of Panama, which is appreciably farther from the middle of the Europe to Asia steamship routes. The shortest route between the Hawaiian Islands and Chicago would be by way of the Orient and Topolobampo.

Other possibilities in joining the Orient with certain of its connecting lines appear favorable. Whether or not some connecting road takes over the Orient will, of course, depend upon its financial strength and upon its decision as to whether the outlay in rehabilitating the road would result in a satisfactory return.

General News Department

The American Society of Civil Engineers held its 53rd annual convention at Chicago this week Wednesday and Thursday. The program was devoted to transportation subjects, ten or a dozen papers being presented on questions in this field. These papers will be abstracted in a future issue of the *Railway Age*.

Pony Express to Run Again

The Pony Express which was operated in 1860 from St. Joseph, Mo., to Sacramento, Cal., will be the subject of a celebration on August 29, when an express will be run from St. Joseph to San Francisco. Seven western states will participate in the celebration, which primarily is to observe the anniversary of the admission of California into the Union. At St. Louis there will be a historical pageant depicting the evolution of transportation from the covered wagon, the stage, the pony express, and the railroad train to the aeroplane.

Flashlight Crossing Signs in Montreal

Approach signs for highway crossings, illuminated day and night by acetylene flashlights, are to be erected at a large number of locations in the city of Montreal. These signs are to be put in by the Highway Lighthouse Company under a contract with the city, the contract providing that the Lighthouse Company may rent the sides of the posts for advertising purposes. It is said that the contract is for a period of five years, and the city expects to be able to dispense with the services of watchmen at certain crossings of tracks which apparently are owned by the city.

Annual Outing of Central Railway Club

The Central Railway Club will hold its annual outing at Dold's Farm, Wheatfield, N. Y., on Saturday, July 28. Those desiring to attend should meet at the Lehigh Valley Station, Buffalo, at 10:45 a. m. daylight saving time, at which point automobiles will be assembled. The grounds may also be reached by the New York Central's Falls Branch train leaving Exchange Street Station at 11:30 a. m., daylight saving time, stopping at the Terrace, Ferry street, Black Rock, and the Wheatfield Farm. The grounds may also be reached by the High Speed International cars which run every half hour from Terrace Terminal.

Heroic Work by C. P. R. Employees

The "Educational Bulletin" of the Algoma District of the Canadian Pacific for the month of June—the general superintendent's circular giving a summary of the month's record of specially meritorious service of employees and also of discipline imposed—contains a paragraph commending Engineman P. Buncombe, Fireman W. Herbert and Conductor A. G. McCall for heroism on the occasion of a bush fire on the White River subdivision, when they ran their locomotive twice through the fire to rescue some trackmen and fire rangers who had been surrounded. There is no doubt, says the bulletin, that they saved these men's lives.

Another Remarkable Performance

by M-K-T Locomotive No. 411

Locomotive No. 411 of the Missouri-Kansas-Texas, noticed in the *Railway Age* of June 23, page 1661, as running from St. Louis, Mo. to Austin, Tex., 975 miles, without being detached from its train, made another run somewhat similar four days later, June 15, when it took a train of 14 passenger cars from St. Louis to Oklahoma City, 549 miles, on 5,420 gallons of oil. Part of the way there were 15 cars and the total number of car miles was 8,523, making the fuel consumption per car mile 0.63 gallons.

The train was taken over the ascending grades between Franklin, Mo. and Sedalia without a helper. This trip, like the former one, was made without detaching the engine from the train.

Canadian War Veterans Want Preference

in Employment on Railways

The Canadian veterans of the world war in convention at Vancouver passed a resolution calling for preference for themselves in the application of the seniority rules on the railways of Canada. They propose, first, that they be given seniority over all unnaturalized aliens; second, that seniority as compared with other Canadian citizens date, not from the beginning of their railway service, but from the date of their enlistment in the army; third, that ex-soldiers be given preference in the employment of new men and in promotion to better positions. The delegates complained that ex-soldiers had been laid off due to reductions in force while, under existing seniority rules, enemy aliens were permitted to remain in service.

Suit for Damages Caused by Pittsburgh Landslide

In the Common Pleas Court at Pittsburgh, Pa., on June 20, the Pennsylvania Railroad entered suit against the city of Pittsburgh for \$1,500,000 damages sustained by the railroad company in connection with the Bigelow Boulevard landslides in the autumn of 1920 and the summer of 1921. Plaintiff claims that the slides were caused by overtaxing the strength of the retaining wall which was made in connection with the construction of the boulevard which is on high ground south of the railroad. The railroad company sustained great damage to a storehouse; to four main tracks and numerous side tracks; to many switch and signal connections, water pipes and other structures; was obliged to construct temporary yards and employ additional switch tenders, telegraphers, etc.; had to use 10 large steam shovels, 2 ditching machines and other apparatus, and it was necessary to carry off 255 trainloads of earth and rock. All this was in 1920; the second slide was less serious but involved the removal of 3,499 cu. yards of earth and rock.

Work Under Way on S. P. Co.'s Mexican Extension

More than six thousand men will be employed soon on the construction of the extension of the Southern Pacific of Mexico, now being built from a point near Tepic to a connection with the National Railways of Mexico 25 miles west of Guadalajara, 85 miles, according to the Utah Construction Company which has the general contract for the line. It is stated that the cost of the extensions will be approximately \$11,000,000 United States currency. Construction material and equipment are being delivered at both ends where the work is now under way. Labor is being rapidly recruited and a full force will be obtained within the next few weeks, it is asserted.

Mining and other industries along the route of the new extension of the Southern Pacific are being greatly stimulated by the prospects of an early transportation outlet being obtained. According to information received here several mining properties are soon to be re-opened and a number of ore reduction mills are to be installed in the region between Guadalajara and Tepic.

Fuel Conservation on the Missouri Pacific

A general fuel conservation committee, including the general manager, the assistant general manager, the mechanical superintendent, the superintendent of transportation, the superintendent of fuel conservation, the fuel purchasing officer, the assistant chief engineer, the auditor of disbursements and the secretary, has been formed on the Missouri Pacific. The committee will prescribe plans and practices to further economies in fuel purchases, distribution, handling, storage and consumption.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MAY AND FIVE MONTHS OF CALENDAR YEAR 1923

Name of road	Average mileage operated during period	Operating revenues			Operating expenses			Operating ratio	Net from railway operation	Operating income (or loss)	Net after rentals 1922.
		Freight	Passenger	Total (inc. misc.)	Maintenance of way and structures	Traffic	Transportation				
Akron, Canton & Youngstown.....	May 170	\$245,531	\$879	\$253,832	\$40,745	\$19,958	\$68,247	58.60	\$105,172	\$90,841	\$61,562
Alabama & Vicksburg.....	5 mos. 170	1,033,646	4,487	1,038,133	156,914	96,437	317,933	60.30	431,354	361,233	229,275
Albany & Vicksburg.....	May 141	1,019,097	280,991	1,401,855	211,853	47,269	498,507	77.70	69,987	35,243	41,564
Albany, Shreveport & Pacific.....	May 188	227,396	97,035	325,000	54,041	64,485	112,333	73.60	92,646	58,095	46,941
Ann Arbor.....	5 mos. 178	1,161,940	463,298	1,768,693	234,459	307,633	554,111	71.40	504,421	353,888	301,224
Ann Arbor.....	5 mos. 293	443,187	35,629	500,520	61,471	105,048	9,379	74.60	126,939	104,866	60,294
Ann Arbor.....	5 mos. 293	1,754,965	188,602	2,030,375	234,788	542,373	975,789	91.60	170,080	57,781	205,592
Archison, Topeka & Santa Fe.....	May 8,947	11,432,855	3,870,305	16,760,865	2,718,446	3,822,285	295,665	73.50	4,435,179	3,293,628	2,025,978
Archison, Topeka & Santa Fe.....	5 mos. 8,945	55,483,445	17,974,063	80,290,063	9,664,444	19,172,308	1,446,117	73.80	22,631,815	16,457,388	8,796,847
Gulf, Colorado & Santa Fe.....	May 1,908	1,391,761	340,294	1,874,596	474,391	514,051	654,570	93.40	124,419	43,523	43,785
Gulf, Colorado & Santa Fe.....	5 mos. 1,908	6,914,874	1,570,563	9,107,326	1,915,987	2,403,038	3,228,911	88.70	1,025,355	619,337	359,510
Panhandle & Santa Fe.....	May 858	489,558	110,914	639,740	110,788	216,132	78,700	88.50	73,341	44,552	14,579
Panhandle & Santa Fe.....	5 mos. 858	2,359,932	537,044	3,082,442	460,860	1,026,267	1,629,073	85.80	437,313	304,836	166,282
Atlanta & West Point.....	May 93	134,725	73,908	237,168	34,142	34,726	86,329	77.00	54,442	45,020	15,289
Atlanta & West Point.....	5 mos. 93	706,100	368,792	1,206,646	184,412	189,111	421,446	76.00	289,752	216,497	172,199
Western Ry. of Alabama.....	May 133	133,513	70,085	226,663	30,025	48,332	74,885	78.80	47,939	40,646	43,825
Atlanta, Birmingham & Atlantic.....	5 mos. 133	756,021	342,129	1,204,449	154,815	218,829	385,134	73.30	321,664	250,963	244,350
Atlanta, Birmingham & Atlantic.....	5 mos. 639	3,013,837	43,529	3,717,076	70,376	90,349	197,988	106.20	23,253	35,953	35,120
Atlantic Coast Line.....	May 4,859	1,612,048	216,316	1,952,596	338,124	445,609	109,003	101.00	1,975,992	1,584,871	1,327,369
Atlantic Coast Line.....	5 mos. 4,859	5,322,855	1,266,275	7,144,544	917,506	1,486,998	161,952	72.60	1,961,116	1,584,871	1,327,369
Charleston & Western Carolina.....	May 342	275,370	35,933	328,242	51,477	51,918	139,943	78.10	71,745	55,745	41,811
Charleston & Western Carolina.....	5 mos. 342	1,461,228	173,395	1,708,012	225,516	225,207	337,878	71.60	485,562	425,384	332,592
Baltimore & Ohio.....	May 5,212	19,649,633	2,453,292	23,609,843	2,190,375	6,860,134	8,015,781	76.30	5,885,958	4,759,082	2,997,175
Baltimore & Ohio.....	5 mos. 5,212	89,495,436	11,285,511	107,281,844	10,672,429	26,832,655	23,967,179	76.70	25,046,428	20,891,296	18,821,718
Baltimore & Ohio.....	5 mos. 83	328,286	106,724	435,010	54,900	46,542	175,600	88.90	36,284	3,868	46,736
Staten Island Rapid Transit.....	May 83	.....	.....	1,543,553	135,921	203,340	906,393	83.80	218,747	8,747	216,970
Bangor & Aroostook.....	May 23	74,871	106,937	215,505	21,336	35,734	2,397	99.52	22,586	9,879	42,356
Bangor & Aroostook.....	5 mos. 23	415,165	49,306	957,912	129,725	176,483	9,547	99.73	2,615	75,348	158,682
Bangor & Aroostook.....	5 mos. 616	503,035	43,529	602,821	115,901	105,930	169,303	69.20	185,609	134,733	166,819
Belt Ry. Co. of Chicago.....	May 32	.....	.....	3,014,764	595,123	596,688	2,296,402	75.70	732,468	503,480	734,605
Belt Ry. Co. of Chicago.....	5 mos. 32	622,383	74,171	622,383	62,909	62,909	248,148	64.00	224,278	189,329	155,055
Bessemer & Lake Erie.....	May 228	1,892,058	25,514	1,960,378	330,556	456,777	26,516	66.10	1,024,416	824,790	742,614
Bessemer & Lake Erie.....	5 mos. 228	6,279,044	146,597	6,579,982	493,520	2,112,680	79,142	54.60	889,896	853,605	929,806
Bingham & Garfield.....	May 34	37,230	38,901	10,032	4,208	1,333	7,899	76.20	9,256	1,705	1,572
Bingham & Garfield.....	5 mos. 34	174,511	182,031	30,372	22,974	6,888	18,377	68.60	56,683	10,727	79,384
Boston & Maine.....	May 2,286	5,242,446	1,712,015	7,881,681	974,882	1,598,875	213,641	80.60	1,529,658	1,289,228	756,113
Brooklyn Eastern District Terminal.....	May 2,286	22,091,071	9,050,729	35,182,163	5,069,629	8,116,481	1,063,159	93.30	2,296,464	1,107,071	1,722,310
Buffalo & Susquehanna R. R. Corp.....	May 9	679,386	137,168	816,554	4,564	15,952	78,540	52.00	58,628	50,130	47,836
Buffalo & Susquehanna R. R. Corp.....	5 mos. 9	208,564	44,456	272,243	26,072	70,476	253,227	52.00	349,392	299,772	301,812
Buffalo & Susquehanna R. R. Corp.....	5 mos. 253	1,144,150	28,731	1,191,523	182,281	384,821	43,230	85.20	34,173	19,323	36,110
Buffalo, Rochester & Pittsburgh.....	May 589	1,690,589	130,959	1,905,947	586,512	586,512	380,767	84.00	190,405	123,254	384,751
Canadian Pacific Lines in Maine.....	May 233	8,856,768	719,438	9,576,206	3,413,513	3,413,513	1,745,011	91.60	160,928	125,843	299,326
Canadian Pacific Lines in Maine.....	5 mos. 233	134,901	26,390	175,594	76,205	35,364	83,260	115.80	1,002,872	827,574	1,442,098
Carolina, Clinchfield & Ohio.....	May 309	800,995	47,419	863,716	182,361	264,770	667,993	80.70	277,356	202,356	147,728
Carolina, Clinchfield & Ohio.....	5 mos. 309	3,626,553	210,533	3,907,279	345,177	1,081,606	1,132,256	75.00	215,634	165,410	284,565
Central of Georgia.....	May 1,920	1,445,832	439,820	2,107,956	286,274	461,001	76,888	71.10	1,129,021	878,323	1,149,092
Central of Georgia.....	5 mos. 1,920	7,789,074	2,275,529	11,050,017	1,358,738	2,197,722	352,173	83.70	373,122	251,291	262,439
Central of New Jersey.....	May 694	4,027,068	737,062	5,086,748	435,351	1,416,232	4,337,518	78.20	2,417,033	1,887,021	1,861,691
Central of New Jersey.....	5 mos. 694	18,593,556	3,426,347	23,438,664	2,121,284	6,208,336	2,043,524	80.50	992,577	675,040	584,140
Central Vermont.....	May 533	646,000	101,000	837,761	102,854	122,821	390,460	83.80	373,122	288,948	1,928,598
Central Vermont.....	5 mos. 533	2,740,250	526,811	3,614,300	408,102	640,951	1,001,591	79.40	304,626	201,459	188,824
Chesapeake & Ohio.....	May 2,552	7,518,062	960,538	8,929,615	1,060,237	1,416,232	4,094,171	74.70	2,862,787	1,957,363	1,983,764
Chesapeake & Ohio.....	5 mos. 2,552	33,230,100	4,345,225	39,614,834	4,546,384	11,002,555	3,072,170	77.60	8,893,036	7,358,115	7,624,252
Chicago & Alton.....	May 1,050	3,962,469	569,297	4,531,766	389,849	764,367	52,293	79.40	569,983	484,476	362,763
Chicago & Alton.....	5 mos. 1,050	9,917,353	2,623,534	13,642,292	1,492,695	3,815,378	291,611	79.20	2,842,775	2,417,233	1,864,097
Chicago & Eastern Illinois.....	May 945	1,653,534	396,212	2,049,797	300,786	715,952	879,269	90.90	202,611	81,739	189,824
Chicago & Eastern Illinois.....	5 mos. 945	9,211,556	1,922,076	12,019,391	1,243,591	3,683,353	348,225	85.80	1,702,944	1,138,460	1,574,863
Chicago & North Western.....	May 8,462	9,841,289	2,353,093	13,787,108	2,263,537	3,357,413	5,560,233	85.00	2,073,006	1,320,899	1,218,966
Chicago & North Western.....	5 mos. 8,462	45,830,123	11,557,632	63,841,582	7,578,398	16,143,104	1,670,510	86.30	8,749,855	4,983,994	3,738,362
Chicago, Burlington & Quincy.....	May 9,403	10,196,261	2,156,156	13,704,092	2,464,901	3,373,476	5,129,430	85.20	2,026,060	1,097,613	1,036,762
Chicago, Burlington & Quincy.....	5 mos. 9,403	53,940,641	10,539,561	71,225,391	7,946,680	16,571,898	11,678,032	77.90	15,713,424	11,069,411	9,883,033
Chicago Great Western.....	May 1,496	1,660,674	320,161	2,186,673	411,876	445,385	54,281	85.50	316,422	238,211	149,122
Chicago Great Western.....	5 mos. 1,496	7,997,479	1,692,953	10,554,084	1,267,641	2,370,303	274,144	84.60	1,626,325	1,227,748	732,967

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MAY AND FIVE MONTHS OF CALENDAR YEAR 1923—CONTINUED

Name of road	Average mileage operated during period.	Operating revenues			Operating expenses			Total.	General.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rentals.	Net after rentals 1922.
		Freight.	Passenger.	Total (inc. misc.).	Maintenance of way and structures.	Traffic.	Trans-shipment.							
Chicago, Indianapolis & Louisville...	657	\$1,135,252	\$317,818	\$1,613,633	\$17,890	1,428	59,075	\$1,148,746	\$35,515	71.20	\$164,887	\$377,875	\$225,526	\$160,335
Chicago, Milwaukee & St. Paul...	537	1,452,882	300,432	1,753,314	20,743	12,448	34,023	1,588,470	37,718	73.80	1,981,759	1,596,704	1,975,704	723,918
Chicago, Rock Island & Pacific...	7,635	7,195,174	2,129,588	10,324,762	1,337,422	187,808	4,373,113	12,274,608	311,799	88.50	1,592,888	1,801,428	318,274	473,118
Chicago, Rock Island & Gulf...	461	1,544,942	333,919	2,091,006	406,185	64,414	1,100,702	5,787,320	1,500,447	83.20	11,714,866	7,758,484	5,357,033	40,050
Chicago, St. Paul, Minn. & Omaha...	1,749	1,569,657	433,508	2,225,570	375,720	34,470	1,036,061	1,982,158	72,840	89.10	243,412	117,349	113,138	170,677
Cincinnati, Indianapolis & Western...	347	1,616,660	365,053	2,427,217	2,227,409	10,217	5,334,674	3,509,698	350,999	85.70	1,664,137	969,441	1,036,751	629,472
Colorado & Southern...	1,099	805,353	172,833	1,094,219	182,008	16,926	415,696	968,013	41,722	88.50	126,206	62,246	76,052	10,827
Ft. Worth & Denver City...	456	2,600,911	708,499	3,345,724	372,862	57,116	1,166,600	174,046	174,046	77.50	798,909	591,092	793,422	916,218
Wichita Valley...	271	81,204	20,423	110,092	19,843	31	41,843	71,333	1,650	64.80	38,759	33,121	22,926	1,210
Columbus & Greenville...	167	439,065	142,005	671,059	173,642	16,991	225,335	547,115	8,153	70.30	154,994	125,125	73,921	41,806
Delaware & Hudson...	886	3,930,783	257,507	4,188,290	952,339	37,530	1,631,375	3,128,873	146,148	70.80	1,287,559	1,202,031	1,166,967	218,780
Delaware, Lackawanna & Western...	993	5,839,124	1,089,582	7,833,401	1,799,787	113,964	3,170,685	16,488,501	706,749	89.10	2,018,932	1,592,645	1,354,885	1,783,173
Denver & Rio Grande Western...	2,593	2,023,614	392,064	2,415,678	427,140	49,792	1,042,669	3,268,433	77,506	85.60	5,054,274	2,989,714	3,443,929	4,314,325
Denver & Salt Lake...	255	1,402,084	20,324	1,422,408	183,491	1,298	4,988,034	4,064,430	406,430	90.20	3,279,109	387,513	674,945	2,170,849
Detroit & Mackinac...	385	1,202,270	25,355	1,227,625	188,300	1,590	329,864	922,994	29,400	103.00	—147,492	—192,593	—171,822	—45,396
Detroit & Toledo Shore Line...	61	1,813,170	.....	1,813,170	150,123	2,566	119,311	877,161	36,212	47.70	960,402	868,902	417,995	388,179
Detroit, Toledo & Ironton...	454	891,110	8,981	917,327	129,399	8,456	298,853	584,426	22,878	63.70	332,901	320,337	170,961	106,690
Duluth, Missabe & Northern...	305	2,189,665	17,891	2,454,565	161,022	2,834	4,692,949	19,299	19,299	36.60	1,555,245	1,120,638	1,113,482	1,688,855
Duluth, South Shore & Atlantic...	591	1,440,826	86,051	1,526,877	258,870	5,876	339,996	11,290	11,290	82.00	159,467	131,467	103,710	44,685
Duluth, Winnipeg & Pacific...	591	1,660,727	455,480	2,116,207	366,219	1,211,757	883,409	1,558,336	58,713	85.70	327,909	181,886	90,201	299,996
Elgin, Joliet & Eastern...	459	2,321,786	3,137	2,324,923	219,361	17,949	489,509	28,522	28,522	80.00	227,256	123,771	130,065	21,750
El Paso & Southwestern...	1,139	858,131	171,397	1,029,528	3,040,666	10,617	766,772	1,577,421	35,488	60.50	1,031,763	956,514	717,621	485,658
Erie Railroad...	2,039	8,421,308	1,077,576	10,358,210	1,120,433	133,803	3,744,972	325,204	805,383	77.80	2,304,357	1,944,051	2,160,662	439,772
Chicago & Erie...	269	1,192,277	58,390	1,332,870	139,980	22,421	2,104,041	4,265,130	1,426,500	84.00	8,032,250	6,369,619	4,113,958	4,113,958
New Jersey & New York...	45	22,141	103,466	130,627	16,110	1,369	72,454	1,167,636	5,203	90.10	12,991	9,266	19,025	4,667
New York, Susquehanna & Wtn...	135	326,866	58,714	385,580	112,406	6,613	357,538	563,192	20,503	88.50	73,111	56,165	83,762	50,601
Evansville, Ind. & Terre Haute...	140	595,218	34,325	629,543	44,299	2,018	48,860	1,079,932	2,770	98.10	2,109	2,125	33,285	48,274
Florida East Coast...	764	4,653,996	2,638,932	7,292,928	187,411	12,445	4,000,515	33,368	33,368	82.50	116,115	94,948	82,371	169,913
Fort Smith & Western...	249	86,960	20,943	107,903	19,993	4,934	26,693	7,138	7,138	53.90	3,814,350	3,688,321	2,976,937	2,509,350
Galveston Wharf...	13	.....	.....	.....	173,207	3,284	158,213	15,326	15,326	73.70	147,732	62,664	63,980	51,296
Georgia Railroad...	328	402,495	104,655	507,150	113,730	21,221	2,201,309	440,888	20,904	81.40	100,711	94,367	79,163	78,590
Georgia & Florida...	405	1,856,589	497,198	2,353,787	478,538	104,338	1,092,485	2,406,410	97,994	81.30	468,865	436,441	391,515	231,527
	405	104,208	18,765	122,973	16,969	8,220	54,856	1,066,410	7,193	81.20	24,685	18,353	10,850	11,621
	405	577,008	92,005	669,013	88,897	40,971	294,116	553,894	35,122	78.20	154,614	122,379	78,670	1,713

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MAY AND FIVE MONTHS OF CALENDAR YEAR 1923—CONTINUED

Name of road	Average mileage operated during period.	Operating revenues			Maintenance of way and structures.			Operating expenses			Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rentals.	Net after rentals 1922.
		Freight.	Passenger. (inc. misc.)	Total.	Way and structures.	Traffic.	Transportation.	General.	Total.						
Grand Trunk Western.....	347	\$1,542,337	\$174,671	\$1,825,314	\$205,294	\$330,594	\$25,933	\$638,466	\$1,271,173	69.60	\$554,141	\$496,149	\$174,520	\$28,298	
Chic., Det. & Can. Gr. Tr. Jct.	59	303,424	9,130	347,634	16,521	16,711	1,383,631	3,211,129	5,801,590	71.30	2,330,671	2,033,067	770,732	504,342	
Detroit, Grand Haven & Mil.....	189	520,769	40,404	624,450	75,849	67,677	17,263	255,867	421,796	67.50	202,654	199,090	616,381	355,900	
Great Northern.....	8,235	7,253,782	1,133,270	8,387,052	2,089,797	2,089,208	154,035	3,364,789	5,925,060	85.40	1,376,909	608,250	882,136	900,345	
Green Bay & Western.....	234	98,063	10,014	115,457	27,959	21,916	2,693	45,106	100,528	87.00	14,929	35,265	8,926	13,839	
Gulf Coast Lines.....	922	651,374	161,859	882,413	151,115	146,774	29,075	236,617	599,634	68.00	282,779	231,184	214,922	204,342	
Gulf & Ship Island.....	307	221,982	41,868	339,128	59,259	49,557	9,367	85,417	263,626	77.70	75,502	70,628	34,320	63,842	
Gulf, Mobile & Northern.....	307	1,048,653	186,876	1,272,312	225,627	194,416	40,484	403,370	981,336	71.50	390,275	266,967	220,315	199,066	
Hocking Valley.....	348	1,535,790	90,380	1,759,823	130,640	518,810	14,649	460,673	1,160,714	66.00	599,109	517,321	465,523	221,988	
Illinois Central.....	4,839	10,949,848	2,088,040	14,250,219	2,041,412	3,575,193	66,276	5,439,367	11,550,698	81.10	2,699,521	1,965,816	1,799,363	1,933,655	
Ill. Cent. & Yaz. & Miss. Val. Comb'd.....	6,219	12,120,071	2,409,636	15,839,633	2,495,349	3,961,169	18,727	6,080,245	13,094,411	83.70	2,743,220	1,900,172	1,716,475	2,001,387	
International & Great Northern.....	1,159	878,325	191,353	1,175,038	240,500	30,942	472,338	30,686,937	7,995,200	79.10	167,433,210	119,955,149	11,521,761	9,649,723	
Kansas City, Mexico & Orient.....	272	148,702	7,437	156,139	156,139	26,800	5,896	72,234	698,720	105.80	-38,402	74,876	12,508	33,999	
Kan. City, Mex. & Orient of Tex.....	465	129,997	11,002	140,999	33,707	48,715	6,282	78,834	173,166	116.50	-24,478	-74,876	-50,688	-46,562	
Kansas City Southern.....	767	1,269,042	208,865	1,654,661	244,362	324,542	33,668	576,564	72,993	75.70	402,360	313,921	295,237	289,906	
Texasarkana & Ft. Smith.....	95	184,115	16,679	200,794	21,928	4,762	64,503	9,077	114,838	75.60	1,983,966	1,545,660	1,369,938	1,260,260	
Kansas, Oklahoma & Gulf.....	314	180,715	11,448	192,163	37,633	41,866	7,265	78,062	126,116	88.60	22,673	12,729	1,602	35,591	
Lake Superior & Ishpeming.....	33	141,317	30	169,604	18,048	219	35,318	2,955	75,021	41.70	94,583	87,283	85,528	7,446	
Lake Terminal.....	33	176,734	451	209,062	95,032	75,423	1,388	85,783	271,896	130.10	-62,834	-99,326	-93,283	-165,203	
Lehigh & Hudson River.....	96	266,180	12,223	278,477	24,907	43,639	2,533	102,583	182,818	65.60	95,659	83,157	71,897	18,119	
Lehigh & New England.....	219	583,653	1,801	595,176	65,153	101,670	7,099	162,714	353,923	70.80	345,730	288,728	266,442	90,502	
Lehigh Valley.....	219	2,392,891	10,333	2,403,224	223,221	713,546	41,433	86,247	1,828,513	74.90	514,184	573,602	573,602	49,424	
Los Angeles & Salt Lake.....	1,335	5,634,779	535,668	6,682,120	703,711	2,030,774	90,586	2,711,976	5,683,882	85.10	908,238	788,288	710,988	121,753	
Louisiana & Arkansas.....	302	304,472	32,964	346,663	51,659	43,875	8,458	102,748	214,263	61.80	132,400	102,899	88,616	67,978	
Louisiana Ry. & Nav. Co.....	302	1,494,767	16,510	1,511,277	233,445	39,789	510,743	43,452	1,041,158	61.30	655,978	509,470	468,663	211,128	
Louisville & Nashville.....	5,040	8,806,900	2,102,876	10,909,776	1,459,820	2,799,553	229,209	4,273,634	3,612	89.70	35,498	18,422	-7,342	-61,924	
Louisville, Henderson & St. Louis.....	5,039	42,165,511	9,851,261	52,016,772	6,851,699	13,776,780	1,168,415	20,970,937	1,168,799	85.60	246,217	153,437	10,407	-83,021	
Maine Central.....	199	217,130	67,396	284,526	60,114	38,633	6,477	93,189	44,152,796	107.00	-5,020	-9,020	-19,437	-19,437	
Maine Central.....	199	1,034,509	301,289	1,335,798	276,034	186,582	31,917	478,565	9,046,316	107.00	-5,020	-9,020	-19,437	-19,437	
Midland Valley.....	365	295,228	67,505	381,084	69,706	116,849	5,773	27,020	266,950	77.50	2,622,131	2,106,102	2,113,244	2,814,565	
Minneapolis & St. Louis.....	1,649	1,054,506	128,254	1,182,760	190,516	332,407	28,280	574,760	1,531,439	79.70	103,410	98,686	87,680	75,009	
Minneapolis, St. Paul & S. S. Marie.....	4,387	15,010,261	2,869,768	17,880,029	2,445,207	3,664,952	287,450	9,054,078	48,174	71.20	411,586	354,892	280,842	195,243	
*New Road.....									43,713	85.30	263,288	165,854	135,528	171,468	
									7,566,797	89.80	380,767	215,632	720,199	720,199	
									7,566,797	81.50	1,152,909	981,966	125,308	166,563	
									7,566,797	70.10	114,134	98,937	89,750	66,563	
									7,566,797	65.60	644,075	567,567	517,758	617,086	
									7,566,797	92.20	98,968	28,432	15,787	39,186	
									7,566,797	86.60	924,814	584,739	464,238	201,955	
									7,566,797	75.50	1,007,709	741,130	711,088	65,693	
									7,566,797	82.90	3,297,856	1,993,273	1,995,466	-334,203	

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MAY AND FIVE MONTHS OF CALENDAR YEAR 1923—CONTINUED

Name of road	Average mileage operated during period	Operating revenues			Operating expenses			Operating ratio	Net from railway operation	Operating income (or loss)	Net rentals after 1922	Net after rentals 1922
		Freight	Passenger	Total (inc. misc.)	Way and structures	Traffic	Trans- portation					
Maryland, Delaware & Virginia..... May 5 mos.	82	\$75,552	\$19,944	\$95,496	\$7,054	\$1,268	\$64,762	100.60	—\$612	—\$2,928	—\$5,357	—\$26,667
West Jersey & Seashore..... May 5 mos.	359	271,970	84,353	356,323	37,923	6,623	293,953	132.40	—120,988	—134,007	—129,194	—100,210
Peoria & Pekin Union..... May 5 mos.	19	22,541	14,864	37,405	33,998	486	60,370	85.20	21,737	9,237	36,375	4,996
Pere Marquette..... May 5 mos.	2,212	3,211,886	408,587	3,620,473	577,213	2,657	3,222,772	75.10	185,505	123,005	252,820	23,887
Philadelphia & Reading..... May 5 mos.	1,125	8,328,475	880,432	9,208,907	523,504	97,173	3,237,331	60.90	3,801,747	3,534,217	3,316,478	491,813
Atlantic City..... May 5 mos.	170	123,444	204,335	327,779	326,354	405,695	16,530,620	65.60	15,850,878	14,511,277	13,393,923	5,459,281
Perkiomen..... May 5 mos.	41	86,237	7,185	93,422	4,589	107	46,576	108.00	—112,500	—212,770	—369,455	—161,146
Port Reading..... May 5 mos.	21	1,021,574	31,954	1,053,528	33,716	539	209,918	63.50	35,404	28,499	22,787	31,282
Pittsburg & Shawmut..... May 5 mos.	102	81,591	4,178	85,769	21,248	1,746	32,176	117.90	—15,976	—16,117	23,059	—40,871
Pittsburgh & West Virginia..... May 5 mos.	89	569,728	28,900	598,628	104,742	8,368	231,413	100.40	—2,589	—3,371	176,239	17,532
Pittsburg, Shawmut & Northern..... May 5 mos.	210	106,635	4,873	111,508	33,775	1,928	48,275	100.00	—1,289	—1,968	34,114	43,762
Quincy, Omaha & Kansas City..... May 5 mos.	250	67,854	23,292	91,146	48,750	734	41,693	110.30	—57,724	—81,402	—115,236	—69,490
Richmond, Fredericksburg & Potomac..... May 5 mos.	117	646,497	317,702	964,199	113,910	8,006	334,004	63.00	410,425	344,835	270,017	246,560
Rutland..... May 5 mos.	413	369,854	102,586	472,440	114,834	4,407	249,123	83.60	94,897	70,842	72,860	15,410
St. Louis-San Francisco..... May 5 mos.	4,751	5,110,645	1,650,646	6,761,291	1,041,695	94,390	2,604,370	73.40	1,977,666	1,638,086	1,511,849	1,607,488
Ft. Worth & Rio Grande..... May 5 mos.	235	77,846	37,728	115,574	37,728	1,576	77,846	117.30	—20,223	—24,091	—32,938	—35,209
St. Louis, San Francisco & Texas..... May 5 mos.	134	103,825	13,224	117,049	26,722	3,656	56,816	98.70	1,604	—628	—24,025	—9,231
St. Louis Southwestern..... May 5 mos.	968	1,373,979	163,451	1,537,430	202,398	19,224	274,433	96.50	21,432	10,571	—97,454	—83,255
St. Louis Southwestern of Texas..... May 5 mos.	968	7,785,517	757,826	8,543,343	1,014,083	219,037	2,357,946	62.30	3,386,752	2,948,191	2,607,240	1,956,339
San Antonio & Aransas Pass..... May 5 mos.	739	351,875	60,010	411,885	452,609	10,628	187,587	98.20	8,111	—7,499	—3,780	—11,710
San Antonio, Uvalde & Gulf..... May 5 mos.	317	135,780	14,836	150,616	509,611	54,278	913,993	110.40	—208,410	—286,421	—225,921	—313,907
Seaboard Air Line..... May 5 mos.	3,575	16,143,583	4,472,869	20,616,452	2,808,718	171,784	9,280,635	78.10	4,994,896	4,115,332	2,875,170	1,381,427
Southern Ry..... May 5 mos.	6,971	9,264,139	2,714,995	11,979,134	142,259	20,105	308,521	121.30	—131,310	—158,867	—133,236	—150,465
Alabama Great Southern..... May 5 mos.	318	44,556,297	12,819,715	57,376,012	8,307,668	101,013	1,278,221	75.30	15,273,695	12,570,916	11,178,034	6,456,690
Cinn., New Orleans & Tex. Pacific..... May 5 mos.	338	1,693,240	363,471	2,056,711	231,019	35,251	686,623	68.00	692,502	587,312	505,003	304,355
Georgia Southern & Florida..... May 5 mos.	402	309,423	109,656	419,079	1,105,917	170,339	2,891,616	78.50	3,126,164	2,608,572	2,314,317	1,291,096
New Orleans & Northeastern..... May 5 mos.	207	449,947	87,588	537,535	79,864	10,776	214,237	73.20	160,519	109,720	101,254	70,016
Northern Alabama..... May 5 mos.	110	141,567	13,167	154,734	26,008	2,245	48,736	53.50	78,540	52,524	48,313	162,669
Southern Pacific..... May 5 mos.	7,117	11,138,089	3,746,465	14,884,554	2,213,819	259,939	5,416,264	69.10	5,117,863	3,838,597	3,627,487	2,999,867
Arizona Eastern..... May 5 mos.	382	285,819	30,469	316,288	10,787,590	14,088,200	2,227,192	72.60	20,747,790	14,412,804	13,841,843	9,167,649
		1,311,163	153,247	1,464,410	203,776	14,574	383,466	60.30	613,069	478,412	414,967	284,300

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MAY AND FIVE MONTHS OF CALENDAR YEAR 1923—CONTINUED

Name of road	Average mileage operated during period	Operating revenues			Operating expenses			Operating ratio	Net from railway operation	Operating income (or loss)	Net after rentals 1922.
		Freight	Passenger	Total (inc. misc.)	Maintenance of way and structures	Traffic	Transportation				
Atlantic Steamship Lines.....	May 5 mos.	\$1,041,825	\$56,665	\$1,152,079	\$17,822	\$16,972	\$709,592	81.60	\$211,676	\$200,279	\$152,971
Galv., Harrisburg & S. Antonio.....	May 5 mos.	3,140,941	1,692,383	4,833,324	342,152	102,229	3,136,012	80.70	1,099,174	1,041,563	600,610
Houston & Texas Central.....	May 5 mos.	1,316,891	252,713	1,569,604	408,422	155,531	756,656	92.10	1,444,632	1,041,563	188,591
Houston, East & West Texas.....	May 5 mos.	6,522,355	2,011,325	8,533,680	1,937,362	226,262	3,646,743	88.90	1,003,258	697,784	501,923
Morgan's L. & T. R. R. & S. S. Co. May 5 mos.	May 5 mos.	764,328	249,227	1,013,555	197,265	25,292	421,709	85.20	160,963	106,465	137,563
Louisiana Western.....	May 5 mos.	3,769,698	1,239,821	5,009,519	1,222,235	127,334	2,070,844	90.10	531,013	260,218	69,662
Texas & New Orleans.....	May 5 mos.	191	180,200	180,391	55,667	3,598	101,152	93.50	15,423	7,050	26,668
Spokane, Portland & Seattle.....	May 5 mos.	501,300	142,958	644,258	164,601	15,923	292,924	94.90	35,872	11,404	—8,098
Tennessee Central.....	May 5 mos.	2,663,510	756,322	3,419,832	830,435	1,457,046	1,457,046	89.30	396,032	165,443	—129,103
Term. Railroad Assoc. of St. Louis.....	May 5 mos.	207	82,263	82,470	37,177	9,548	117,320	75.40	92,469	64,293	41,617
East St. Louis Connecting.....	May 5 mos.	1,375,767	424,160	1,800,927	320,662	48,406	570,297	72.60	528,610	378,542	275,141
St. Louis Merch. Bridge Term.....	May 5 mos.	541,508	154,844	696,352	179,921	13,242	251,739	87.70	91,206	62,634	52,099
St. Louis Transfer Ry.....	May 5 mos.	2,594,402	769,302	3,363,704	871,169	67,192	1,335,566	93.30	243,695	100,161	5,065
Texas & Pacific Ry.....	May 5 mos.	64,878	14,889	79,767	16,865	3,017	33,556	84.00	13,800	7,952	1,435
Toledo, Peoria & Western.....	May 5 mos.	387,901	81,354	469,255	68,040	16,012	189,701	72.60	136,005	106,914	68,798
Toledo, St. Louis & Western.....	May 5 mos.	493,214	135,065	628,279	91,527	9,556	200,949	66.60	231,116	156,073	130,006
Trinity & Brazos Valley.....	May 5 mos.	2,236,986	622,727	2,859,713	361,154	46,361	986,308	66.20	1,067,918	692,438	122,948
Union R. R. of Penna.....	May 5 mos.	226,022	44,516	270,538	41,253	6,058	105,653	74.60	72,027	66,914	48,400
Union Pacific.....	May 5 mos.	1,027,903	204,682	1,232,585	211,738	29,121	503,013	75.90	313,563	287,609	187,145
Utah.....	May 5 mos.	1,641,503	564,484	2,205,987	345,219	1,019	149,086	59.10	184,603	129,922	252,221
Virginian.....	May 5 mos.	872,627	284,964	1,157,591	179,930	4,972	703,128	66.10	704,378	395,620	1,006,569
Wabash.....	May 5 mos.	95,287	38,761	134,048	27,342	2,396	60,777	32.40	129,481	102,394	81,664
Western Maryland.....	May 5 mos.	471,170	218,381	689,551	132,425	12,546	396,671	41.80	582,363	512,977	415,455
Western Pacific.....	May 5 mos.	1,063,116	31,866	1,094,982	39,618	938	182,659	57.80	170,226	103,910	76,361
Wheeling & Lake Erie.....	May 5 mos.	5,124,260	145,739	5,270,000	140,535	4,563	971,916	64.80	746,959	588,618	557,182
		91,057	13,818	104,875	24,669	169	36,136	60.60	26,473	26,107	34,552
		368	526,073	526,641	140,677	825	188,639	66.50	119,699	118,250	86,159
		1,952	1,641,503	1,643,455	345,219	50,922	924,365	79.50	498,984	396,709	354,163
		1,952	872,627	874,579	179,930	249,157	4,911,912	86.60	1,693,038	1,181,598	592,684
		247	95,287	95,839	27,342	2,396	78,993	111.70	17,667	18,718	25,917
		247	471,170	471,641	132,425	12,546	396,671	108.90	67,203	122,337	96,773
		454	1,063,116	1,064,180	312,909	20,732	325,803	57.20	494,963	417,266	342,100
		454	5,124,260	5,129,484	141,417	106,210	1,681,399	58.80	2,273,934	1,905,313	1,590,644
		368	91,057	91,149	24,669	3,250	53,626	112.80	21,715	21,715	33,662
		368	526,073	526,641	140,677	16,785	311,724	105.10	32,474	70,448	155,935
		128	92,332	92,450	18,121	3,556	71,024	82.90	25,618	19,615	13,084
		128	341,703	341,944	62,916	10,463	308,762	89.40	65,635	35,610	13,139
		45	.....	.....	76,061	162	509,168	71.70	329,398	254,723	366,285
		45	.....	.....	303,777	864	2,383,536	78.00	1,043,062	853,937	1,303,972
		3,708	6,436,231	6,442,667	1,531,501	169,328	2,499,953	73.60	2,332,009	1,767,146	1,670,650
		3,708	31,718,665	31,724,883	4,735,899	690,354	12,698,639	71.00	12,203,974	9,380,119	9,598,174
		2,366	2,171,993	2,174,186	616,161	49,856	881,178	77.10	498,680	246,656	233,872
		2,366	11,456,698	11,468,156	3,053,733	216,445	4,787,313	82.30	3,319,334	2,058,318	1,913,654
		2,238	1,638,928	1,640,566	505,825	68,907	921,669	89.10	249,378	82,486	7,337
		2,237	7,965,618	7,973,586	2,166,375	301,714	5,084,474	94.20	642,878	518,099	518,099
		258	224,999	225,257	65,197	2,741	104,772	88.80	30,367	17,000	5,180
		258	1,132,165	1,133,330	198,768	12,494	603,612	84.60	205,917	139,822	75,216
		102	107,672	107,779	24,222	344	27,553	86.40	14,776	9,633	4,689
		102	589,801	590,380	86,474	1,737	172,192	79.60	122,168	87,738	60,052
		540	1,968,344	1,970,308	441,969	12,309	533,283	55.10	970,260	870,894	893,207
		540	8,398,665	8,407,063	1,770,249	58,277	2,463,646	59.60	3,750,455	3,236,217	3,436,711
		2,472	4,456,361	4,460,717	775,990	121,757	2,026,637	75.70	1,387,564	1,190,147	999,816
		2,472	20,783,505	20,785,988	3,300,407	588,931	10,254,422	78.70	5,589,977	4,631,562	3,330,297
		804	1,951,969	1,953,938	559,151	40,160	721,489	77.20	485,505	395,505	412,278
		804	8,758,021	8,766,779	2,537,194	177,667	3,481,386	78.40	2,086,666	1,711,660	1,873,211
		1,043	823,831	824,662	174,469	36,160	365,017	74.10	289,302	210,627	260,628
		1,043	3,498,321	3,498,321	717,766	167,408	1,732,462	82.90	791,869	406,624	728,672
		511	1,633,822	1,635,644	568,748	16,586	556,236	71.90	514,246	398,549	331,327
		511	5,938,674	5,944,608	693,227	75,671	2,353,550	80.20	1,334,612	817,793	654,825

Traffic News

The "Farm Power Prosperity Special" is the name of a freight train of 43 cars, moved over the Chicago, Rock Island & Pacific to Wichita, Kans., from Milwaukee, Wis., whence the cars are distributed to wheat growers at various points in Kansas, Colorado, Oklahoma, Texas and New Mexico. These cars were loaded with tractors, and the route was by way of Cedar Rapids, Des Moines and Kansas City. Two trains of 44 carloads each were sent out in the same manner in April, and the present one is the fourth sent this year.

A special passenger train of a locomotive and seven cars, which left Winnipeg, Man., on July 6 at 8:15 a. m., ran through, over the Canadian Pacific, to Quebec, 1,579 miles, in 36 hours, 12 minutes, equal to 43.6 miles an hour. From Smith's Falls, Ont., to Ballantyne, 121 miles, the time was 118 minutes. The regular time of the fastest train between Winnipeg and Quebec is 53 hours. This special train was run to make connection with a steamship for Europe for passengers who had been delayed west of Winnipeg by a landslide.

A fumigation house with a capacity of 20 freight cars has been built by the Federal Horticultural Board at Laredo, Tex. Freight cars coming from Mexico are fumigated to prevent the introduction of the boll weevil. This building takes the place of one destroyed by fire about a year ago, and it is said to be the largest house of the kind in the world. The Federal Board has smaller houses at Brownsville, Tex., Eagle Pass, Tex., El Paso, Tex., and Nogales, Ariz. In the 11 months ending with May last, 127,836 cars were fumigated at a cost of four dollars a car.

From January 1 this year to July 2, a total of 10,217,830 tons of bituminous coal had been unloaded at Lake Erie ports for shipment up the lakes. The Car Service Division of the American Railway Association reports that this is the largest quantity ever dumped during the corresponding period except in 1921 when the total exceeded the total this year by 38,059 tons. During the week which ended on July 2 this year, 21,245 cars were dumped at Lake Erie ports, the largest number of cars reported during any corresponding week except in 1921 when that total was exceeded by 141 cars.

The running time of trains between Chicago and points in Washington and Oregon on the Chicago, Milwaukee & St. Paul, the Great Northern, the Northern Pacific and the Union Pacific will be reduced from 72 to 70 hours commencing July 29. The action is the result of an announcement by the Chicago, Milwaukee & St. Paul that the running time of the Olympian would be reduced two hours as the result of improvements in the electrified zone. The Olympian will leave Chicago at 11 p. m. and arrive at Seattle, Wash., at 7 p. m., on the third day. Returning it will leave Seattle at 9:30 a. m. and arrive in Chicago at 9:30 a. m., the third morning. The Oriental Limited on the Great Northern-Chicago, Burlington & Quincy will leave Chicago at 11:30 p. m. and arrive at Portland, Ore., and Seattle, Wash., at 7:30 p. m. The North Coast Limited on the Northern Pacific-Chicago, Burlington & Quincy will also run on a schedule of 70 hours between Chicago and Portland and Seattle. The Oregon-Washington Limited on the Chicago & North Western-Union Pacific will be changed to the Portland Limited and will leave Chicago at 10:15 p. m. and arrive at Portland at 6:15 p. m. the third day. Returning it will leave Portland at 9:35 a. m. and arrive in Chicago at 9:35 a. m. the third morning after leaving Portland.

Loss and Damage Reduced Thirty Per Cent

For the two months ended February 28, 1923, the amount charged to loss and damage on the Class I railroads of the United States, was \$6,978,716, as compared with \$10,042,534 for the same period last year, a decrease of 30.5 per cent. This year's record charges to rough handling 18.4 per cent; to unlocated damage, 14.7 per cent; defective equipment 12.4 per cent; loss of entire package 10.2 per cent and delay 9.1 per cent.

Commission and Court News

Interstate Commerce Commission

The final hearings on the proposed plans for the consolidation of railroads will be held in Washington soon after the close of the New England hearing which has been deferred until September 24 at the request of New England state governors to whom the Joint New England Railroad Committee appointed by them has recently reported (*Railway Age*, July 7).

At the request or suggestion of the United States Coal Commission an inquiry into the freight rates on anthracite coal has been ordered. It will cover the rates, charges, classifications, regulations and practices on all railroads subject to the Interstate Commerce Act affecting anthracite coal produced in Pennsylvania. The proceeding will be assigned for hearing at a later date.

Changes prescribed by the commission in the export bill of lading to become effective July 20 have been postponed to August 1. Among other changes a statement will be inserted in the bill to the effect that it is issued in conformity with understanding with the Liverpool Cotton Bills of Lading Conference (1907) Committee and the American Bankers' Association. Authority is given to print on both sides of the paper.

State Commissions

The Railroad Commission of California on July 3 authorized the Atchison, Topeka & Santa Fe and the Southern Pacific to reduce the rate for transporting oil from Los Niegos, Cal., to storage facilities at Seguro from \$5 per ton to \$1.84, to meet the emergency created by a sudden active oil gusher at Los Niegos. The low rate will be cancelled as soon as the abnormal situation has been removed.

Court News

Missouri Car Shed Act Held Unconstitutional

The Federal District Court for the Eastern District of Missouri holds that the "Car Shed Act" is in violation of the state Constitution as being too indefinite and uncertain, and as fixing no ascertainable standard of guilt.—*Wabash v. O'Bryan*, 285 Fed. 583.

Covenant in Lease to Maintain Crossing Binds Assignee Under Foreclosure Sale

The Massachusetts Supreme Judicial Court holds that a covenant in a lease of a railroad requiring the lessee to maintain a crossing which the lessor was under obligation to maintain ran with the lands and bound an assignee of the lease under foreclosure sale.—*N. Y. C. v. Central Vermont (Mass.)* 136 N. E. 825.

Jurisdiction of Actions Under Carmack Amendment

The Federal District Court for the District of Minnesota holds that the remedy given by the Carmack Amendment against the initial carrier for loss or damage to goods, regardless of which carrier's negligence caused it, can be maintained only in a jurisdiction in which service can be had upon such carrier as permitted by the Federal Courts.—*Pratt v. Denver & Rio Grande*, 284 Fed. 1007.

Railroad Not Required to Pay Overtime to Custom House Officers

The Court of Appeals of District of Columbia holds that Act Feb. 7, 1920, as to payment by the carrier of extra compensation to custom house officers for examination of baggage at ports of entry has no relation to the baggage of passengers

on railway trains entering the United States from adjacent countries.—*Mellon v. Minneapolis, St. P. & S. S. M.*, 285 Fed. 980.

Not Necessarily Negligence for Licensee on Track to Fail to Look Back

The Circuit Court of Appeals, Sixth Circuit, holds that there is no rule of law which imperatively makes it negligence for a licensee (to use the track as a walk to a factory close by) while walking along the track, to neglect to look back during the 6 or 8 seconds he was on the track, if the track behind him was clear when he entered upon it.—*Pennsylvania v. Crouse*, 286 Fed. 376.

Order Establishing New Rate Does Not Give Shipper Right to Reparation

The Circuit Court of Appeals, Seventh Circuit, holds that evidence that may condemn a rate does not necessarily justify reparation. A rate reasonable when made may become unreasonable as the result of a gradual change in conditions, so that no reparation is ordered by the Interstate Commerce Commission, though a new rate be established for the future.—*Morgan Co. v. Great Northern*, 285 Fed. 876.

Free Return of Damaged Goods

The Georgia Supreme Court holds that a carrier may contract with a consignee to carry, without compensation, goods which have been damaged in transit, from the point of destination, where there were no facilities for repairing them, back to the point of shipment, so that the shipper could have the damage properly repaired and thus lessen the cost to the carrier. This would not constitute discrimination under the state law or the rules of the Railroad Commission. Such a contract, made by the claim agent of the carrier, whose duty it is to adjust claims for damages sustained by shipment, and ratified by the carrier in returning the goods, would be binding.—*Sipple v. S. A. L. (Ga.)*, 114 S. E. 435.

Couplers and Air Brakes—Insufficient Evidence of Necessity for Using Hands

An attempt to couple cars by impact having failed, the brakeman attempted to adjust the knuckle of the coupler with his hands. While doing so the three cars being coupled, which were standing on a slight incline, noiselessly rolled down against the tender, crushing the brakeman. When assistance arrived, it was found that the coupling had been effected by the impact. The brakeman subsequently died, and action for his death was based on the Safety Appliance Act provisions requiring cars to be furnished with automatic couplers and with air brakes.

The Texas Court of Civil Appeals holds that no violation of the statute was shown, there being nothing to indicate that it was necessary for the brakeman to use his hands to effect the coupling. The Court said: "Neither the language nor the purpose of the statute requires the equipment of cars with appliances that will operate with unfailing precision on every occasion. Such a degree of perfection is not essential to the safety of the employee. * * * It may be expected from the very construction of such devices that in the course of time there will be occasions when more than one impact may be required in order to effect a coupling. There is no attempt to show any rule requiring employees to use their hands after one or more failures to couple by impact. The custom of brakemen using their hands is voluntary. It would be manifestly unfair to hold that the carrier had violated the statute until the inefficiency of the device had been disclosed by some reasonable test that would justify the conclusion that it was defective." The Court cited *Chesapeake & Ohio v. Charlton*, 247 Fed. 34, 256 Fed. 988, certiorari denied, 249 U. S. 614, as being a case where the facts were very similar and the evidence was held insufficient to show a violation.

The three cars, standing on a side track, were to be put into a train on the main track. It is held that the haul, which was only a short distance, did not make the engine and the three cars a train, requiring them to be equipped with air brakes under the act. Judgment for plaintiff was reversed and a new trial ordered.—*St. Louis S. W. v. Bounds* (Tex. Civ. App.), 244 S. W. 1099.

Foreign Railway News

Accidents in Roumania and New Zealand

Eight persons were said to have been killed and 38 injured in a derailment to an express train running between Auckland and Wellington, N. Z., which occurred on July 6, according to press reports from Wellington. On July 10, 68 persons lost their lives in a railway accident in Roumania, according to press dispatches which gave no details of the nature of the accident.

International Railway Conference

of the Orient Proposed

TOKIO.

The representatives of the Japanese Department of Railways and the Chinese Department of Communications, whose conference in Tokio has just been concluded, announce a decision to organize an international railway conference of Japan, China and Russia as soon as Russia is able to join. The proposed conference would consider the standardization of rails, cars, services and other matters in the Orient.

Japan's Construction Program

for Current Fiscal Year

TOKIO.

The Japanese Department of Railways has adopted its repair program for the financial year 1923-24. The program involves the expenditure of 64,400,000 yen (\$32,200,000). The program shows that the department will concentrate its activities on the improvement of service in and around Tokio. Roughly, 12,800,000 yen is set aside for the laying of additional tracks, the reconstruction of stations, the extension of overhead electric lines within the city, and other works which are expected to improve the service at Tokio which is now known as insufficient to handle the increasing traffic. Similar improvements are proposed to be made on the lines in and around Osaka, Kyoto, Kobe and adjacent towns which are rapidly developing as industrial towns. The main work to be undertaken elsewhere includes some double tracking and the electrification of the Yokohama-Yokosuka and the Yokohama-Odawara sections.

Recent Railway Developments in Argentina

BUENOS AIRES.

Interest in Argentine railroad circles is now centered on the report presented to the Cabinet by the Minister of Public Works in conjunction with the Administrator of the State Railways. In this report it is affirmed that the sum of \$300,000,000 will be required to complete the state-owned lines now under construction and to build those for which surveys have already been made. It is generally understood that once the presidential message to Congress recommending that this report be accepted has made its appearance, Congress will study the matter at an early date and provide the plans for securing the necessary capital. The money is to be spent over a period of three years and will bring the capital employed by the State Railways up to the sum of \$800,000,000 Argentine paper.

The three methods for securing the money already discussed are: (1) A domestic or foreign loan; (2) issue of bonds and (3) sale of public lands. It is probable that the matter will boil down to the necessity of securing a foreign loan. Certainly the sale of public lands in the respective zones of influence can hardly be expected to provide the funds unless the lands are sold in large tracts to capitalists for speculative purposes, a very unsatisfactory procedure, for in order to build up traffic over the new lines the land should be sold on long term payments in small tracts to men who will settle down and farm it.

Considerable interest is also being manifested by Argentina in the discussion of the proposed Transandine route (Salta-Antofagasta) as agreed upon by the Chilean and Argentine governments and which is now under debate in the Chilean Senate. While there has been much opposition on the part of the Chilean agriculturists to the Salta-Antofagasta line, based upon the probable loss of the Northern Chilean market for the produce of

Chilean farms which will probably be shifted to Argentine farmers, it appears that public opinion generally is in favor of the construction of the Chilean section of this route and it is hoped that the agreement will soon be ratified by the Chilean Senate. Recently the Argentine and Chilean sections of the International Transandine Line, Mendoza-Santiago, were amalgamated under one management and freight rates were reduced 30 per cent. This measure will undoubtedly bring about considerable increase in traffic over the Transandine line which should begin to be felt in the dividends paid by the line in the near future.

A dismal commentary on the state of transportation in Argentina is afforded in a circular issued by the Argentine Confederation of Commerce, Industry and Production announcing the meeting of the Second National Economic Conference to take place in Buenos Aires during the first fortnight of August. A few paragraphs from this circular follow:

"Even though we have achieved the political unity of the Republic, we are as yet far from having worked out its economic unity. Northern Argentina is separated from the rest of the country by a barrier which is more formidable than the ocean and the customs house—this barrier is "FREIGHT." Cardiff coal is in terms of transportation cost much nearer to Buenos Aires than is the excellent quebracho fuel of Santiago del Estero, and Cadiz salt than that of the Pampa and San Luis. To bring a ton of sugar from Cuba only costs half as much as it does to bring one from Tucumán. A study of the railway tariffs initiated by the tariff committee last year ought to be followed up; comparison should be made between railway freights on domestic products and the maritime freights on foreign goods plus customs duties.

"The possibilities of increasing tariffs on foreign goods similar to those of domestic production which on account of the high cost of freights cannot enter into competition in all parts of the country ought to be contemplated. Either the freight on domestic goods should be lowered or the duties on foreign goods should be raised. The question is to make conditions for the receipt of goods at the principal centers of consumption equal for both domestic and foreign products of a similar nature.

"The economic isolation of Northern Argentina should be studied thoroughly from the point of view of its principal cause—transportation. Consideration should be given to the possibility of manufacturing the produce on the spot in order to obtain an article of a high value which would be able to stand the freight if the freight cannot be lowered."

Take the case of the Argentine Portland Cement Company, as an example. Back in 1914 when cement was scarce in Argentina and the price ran at times as high as \$30 per barrel the International Portland Cement Company secured an excellent holding at Sierras Bayas (Province of Buenos Aires) on the Southern Railway, some 270 miles from Buenos Aires. No doubt before deciding to invest the millions that were necessary to erect one of the most up-to-date cement plants in the world at this point, the company must have entered into a freight agreement with the Southern Railway whereby special concessions were obtained. However, in spite of this the company today finds that it is costing them fully 25 per cent more to send their cement to Buenos Aires—270 miles away—than it costs Swedish, Danish, German and British cement manufacturers to lay their products down on the wharves of Buenos Aires. Nearby this cement plant there are a number of rock quarries. However, for paving those streets of Buenos Aires which use flag-stones it is cheaper to bring these from Norway, largely on account of high railway freight.

At the present time there is in operation in Argentina 22,710 miles of railway track of the various gages against 22,293 in 1922. The net earnings of the five principal privately-owned British lines for the first five months of 1923 show an increase of 17 per cent over net profits for the same period of last year. The reports read by the chairmen of the boards of each of these companies at annual meetings held in London during the past several months are all optimistic in tone and this optimism is reflected in the firmness of quotations for Argentine railways on the London Stock Exchange.

The local firm of Dates & Hunt has secured from the Province of Buenos Aires the contract to build the La Plata-Meridiano V. Railroad which is to be incorporated into the system of narrow gage lines already owned by the Province. The cost of this undertaking is to be approximately \$17,000,000 Argentine gold pesos. The Buenos Aires Western has inaugurated the first section of their electric lines which comprise the 23 miles between

Moreno and the Once Station. The entrance to the station has been made possible by combination with the subway system owned and operated by the Anglo-Argentine Tramway Company.

Dr. Thomas A. Le Breton, former Argentine Ambassador in Washington and now Minister of Agriculture, has secured from the principal railways of the country a reduction of 50 per cent on freight covering seeds intended for planting. This has been done to enable farmers throughout the republic to secure selected seed at a reduced price. Likewise, a reduction of 50 per cent has been granted by the railroads for returning cattle whose owners had sent them to the Liniers market but were unable to effect a sale due to the limited demand owing to restricted purchases by the packing houses.

The Great Southern has mounted a number of seed selecting machines on motor trucks which they are sending to as many farmers as solicit them for the purpose of classifying seed for this year's crop. The thought of the company is to aid farmers to secure larger returns from the land by planting only the best possible seed. Gradually the railroad companies in Argentina are adopting the methods employed by the railroads in the United States by sending out cars with agricultural exhibits in charge of experts who are striving to educate the people to more modern farming methods along their lines.

The chairmen of the Buenos Aires Western and the Great Southern, Sir Albert Bowan and Sir Henry Bell, have lately been making extensive tours on the lines of both companies. They express themselves as particularly interested in the narrow gage railways that are being built as feeders to trunk lines. The construction work on the cars for the State Railways, the metal parts for which were furnished by the Middletown Car Company, is still being delayed owing to the slowness with which the timber is being furnished by the government. The shops especially erected in Tafi Viejo (Province of Tucumán) for the purpose of building these cars are the largest in South America.

Annual Meeting of the British Institute of Transport

The Institute of Transport of Great Britain held its third annual congress in Sheffield on June 14-16. The following papers were presented:

The Railway Requirements of an Important Industrial Area, by J. A. Jenkinson.

Modern Trackwork and Its Importance, by Sir Robert Hadfield, Bart.

Air Transport, by Major-General Sir W. Sefton Brancker, K. C. B.

Cargo Handling at Ports; British and American Methods Compared, by Brysson Cunningham.

Some Comparisons of British and American Methods in Road Construction and Maintenance, by A. Dryland.

Tramways from a Traffic Point of View Under Existing Conditions, by E. S. Rayner.

The meeting was opened by the president, Sir Sam Fay, at the famous Cutlers' Hall, Sheffield, with the membership and representatives of the municipal government in attendance. The members visited the River Don Works of Vickers, Ltd., the rolling stock manufacturers; the East Hecla Works of Hadfields', Ltd.; the rolling mills of Steel, Peech & Tozer; the Penistone Works of Cammell Laird & Company; the works of John Brown & Company, Thomas Firth & Sons and Craven Brothers, Ltd.; the Doncaster Works of the London & North Eastern; the Grimsby and Immingham docks of the London & North Eastern; the Port of Goole; and the Aire & Calder Navigation.

Sir Joseph G. Broodbank is president of the Institute for the ensuing year.

THE GALVESTON, HARRISBURG & SAN ANTONIO has adopted a policy of giving preference to men when women office employees resign. During the war many women were employed in the offices and have remained.

"SOME SAFETY SIGNS That Will Save Something in Sorrow" is the title of a leaflet which is being distributed to automobile owners and others by the Chicago, North Shore & Milwaukee (electric) road. This company is also giving out pasters, for use on windshields and other parts of automobiles, bearing the legend, in red, white and gold, "This car stops at all railroad crossings."

Equipment and Supplies

Locomotives

THE NASHVILLE, CHATTANOOGA & ST. LOUIS contemplates coming in the market soon, for a number of locomotives.

Freight Cars

THE NEW YORK, CHICAGO & ST. LOUIS is inquiring for 25 center constructions.

THE MINNESOTA STEEL COMPANY is inquiring for 44 hopper cars of 50 tons' capacity.

THE SOUTHERN RAILWAY is inquiring for prices on 1,000 steel center constructions for box cars.

THE NEW YORK CENTRAL is inquiring for from 100 to 500 all steel hopper car bodies of 55 tons' capacity.

THE PORT OF MONTEVIDEO RAILWAYS are inquiring through the car builders for 10 gondola cars of 22 tons' capacity.

THE PERE MARQUETTE ordered 25 steel center constructions for caboose cars, from the Pressed Steel Car Company.

THE CARNEGIE STEEL COMPANY has ordered repairs to 22 gondola cars from the Tonawago Car Company, Warren, Ohio.

THE MEXICAN PETROLEUM COMPANY has ordered 25 tank cars of 8,000 gal. capacity from the General American Tank Car Corporation.

THE CENTRAL OF NEW JERSEY, reported in the *Railway Age* of June 30 as asking for prices for making repairs to 300 hopper cars, will have these cars repaired in the shops of the Middletown Car Company.

THE LEHIGH & NEW ENGLAND has placed an order with the Magor Car Corporation to repair 150 steel hopper cars and an order has been placed with the Middletown Car Company for repairing 150 steel hopper cars.

THE KANSAS CITY SOUTHERN, reported in the *Railway Age* of May 26 as inquiring for 500 box cars, has ordered 500 steel frame, single sheathed box cars of 40 tons' capacity from the Pennsylvania Car Company, Kansas City, Mo.

THE CANADIAN NATIONAL, reported in the *Railway Age* of June 23 as inquiring for 1,000 box cars, has ordered 750 box cars of 50 tons' capacity from the Canadian Car & Foundry Company, and 250 from the National Steel Car Corporation.

THE NEW YORK CENTRAL, reported in the *Railway Age* of June 23 as asking for prices on the conversion of 2,000 cars, has let contracts for converting 500 old box cars to double deck stock cars to the Standard Steel Car Company; 500 old box cars to single deck stock cars to the American Car & Foundry Company; 500 old gondola cars to flat cars let to the Pennsylvania Tank Car Company; and 500 old gondola cars to flat cars let to the Steel Car Company.

Passenger Cars

THE SOUTHERN PACIFIC, reported in the *Railway Age* of May 19 as inquiring for 16 steel baggage and buffet cars, has ordered this equipment from the American Car & Foundry Company.

THE MISSOURI PACIFIC, reported in the *Railway Age* of June 23 as inquiring for 5 coaches and 10 baggage cars, is now inquiring for 18 coaches, 10 baggage, 12 chair, 9 divided coaches, 8 dining cars and 3 cafe club cars.

Iron and Steel

THE CHICAGO UNION STATION COMPANY is inquiring for 250 tons of reinforcing bars.

THE PENNSYLVANIA is inquiring for 150 tons of reinforcing bars for use at Chicago.

THE ILLINOIS CENTRAL is inquiring for 350 tons of structural steel for a viaduct at Forty-first street, Chicago.

THE CHICAGO & NORTH WESTERN has ordered 500 tons of reinforcing bars from the Truscon Steel Company.

THE GREAT NORTHERN has ordered 110 tons of reinforcing bars from the Concrete Steel Company.

THE CHICAGO, MILWAUKEE & ST. PAUL has ordered 150 tons of reinforcing bars from the Chicago Corrugated Bar Company.

THE NORTHERN PACIFIC has ordered 500 tons of reinforcing bars to be used at St. Paul, Minn., from the Kalman Steel Company.

THE KANSAS, OKLAHOMA & GULF has ordered 372 tons of structural steel consisting of six deck plate girder spans from the Wisconsin Bridge & Iron Company.

THE CENTRAL VERMONT has ordered 157 tons of structural steel for an engine house and machine shop at St. Albans, Vt., from the American Bridge Company.

THE PENNSYLVANIA has ordered 148 tons of structural steel consisting of three single deck plate girder spans for use at Rosedale, Ind., from the Bethlehem Steel Bridge Company.

THE MISSOURI PACIFIC has ordered 256 tons of structural steel from the American Bridge Company, 76 tons from the Virginia Bridge & Iron Company and 68 tons from the Mt. Vernon Bridge Company.

THE KEWAUNEE, GREEN BAY & WESTERN has ordered 342 tons of structural steel for a 230 ft. draw span over the Fox river between Green Bay, Wis., and Ft. Howard, from the Wisconsin Bridge & Iron Company.

Machinery and Tools

THE NEW YORK CENTRAL has placed an order for a 42-in. lathe.

FLORIDA EAST COAST has placed an order for a 42-in. boring mill.

THE TENNESSEE CENTRAL has placed an order for an 18-in. slotter.

THE CENTRAL OF NEW JERSEY has placed an order for a 42-in. planer.

THE UNION PACIFIC has placed an order for a 1,500-lb. steam hammer.

THE VIRGINIAN has placed an order for a 500-ton double end wheel press.

CHICAGO, ROCK ISLAND & PACIFIC has placed an order for a 53-in. boring mill.

THE SOUTHERN PACIFIC has ordered two pile drivers from the Industrial Works.

THE ATLANTIC COAST LINE has received bids for a 300-ton hydraulic bulldozer.

THE SEABOARD AIR LINE has received bids for a 60-in. punch; 60-in. shear; 36-in. punch and a 36-in. shear.

THE PENNSYLVANIA received bids recently for a 36-in. punch; 36-in. shear; 5-ft. radial drill and a 4-ft. radial drill.

THE SOUTHERN PACIFIC has placed orders for a 90-in. driving wheel lathe and a locomotive driving wheel quartering machine.

THE VIRGINIAN has received bids for a 25-in. lathe; 21-in. lathe; 32-in. crank planer; 32-in. shaper and a sensitive drill press.

THE DENVER & RIO GRANDE WESTERN has ordered 16, 7½ ton one-motor 17 ft. span overhead traveling crane and two, 7½ ton 14 ft. span two-motor overhead traveling cranes from Alfred Box & Company.

Miscellaneous

THE CHILEAN STATE RAILWAYS, reported in the *Railway Age* of May 26 as asking for bids on miscellaneous supplies, has ordered 8,200 twist drills of various sizes from the Morse Twist Drill & Machine Company. Orders for spare parts for pneumatic tools were placed with the Ingersoll-Rand Company and for superheater equipments with The Superheater Company. A few miscellaneous parts for locomotive equipment were also ordered from various manufacturers.

Signaling

THE LONG ISLAND has ordered from the General Railway Signal Company a mechanical interlocking, 24 levers, for Blissville, N. Y.

THE GREAT NORTHERN has ordered for the General Railway Signal Company mechanical interlocking apparatus, eight levers and other material, for improvements at Vancouver, B. C.

THE ILLINOIS CENTRAL has ordered from the General Railway Signal Company, a model 2, electric interlocking, 84 working levers, for installation at Richton, Ill. This plant will include 43 switch machines, model 5, 110 volt.

Short Lines in Market for Equipment

The Consolidated Purchasing Agency of the American Short Line Association, McCormick building, Chicago, is in the market for the following equipment and materials:

LOCOMOTIVES

- 8—Consolidation, approximately 72 tons.
- 3—Mogul, approximately 60 tons.
- 5—Ten-wheel, approximately 50 to 60 tons. The above locomotives to have wheel centers of not less than 50 in., and steam pressure of 160 to 200 lb.

FREIGHT CARS

- 30—Ballast, Iowa delivery.
- 10—Air dump, 12-yard capacity, Washington delivery.
- 50—Gondolas, 40 ton capacity, Florida delivery.
- 100—Gondolas, 40 or 50 ton capacity, Kentucky delivery.
- 6—Flat, 40 ton capacity, steel underframe, 41 ft. long, Pacific Coast delivery.
- 50—Flat, 40 ton capacity, Florida delivery.
- 50—Stock, 30 ton capacity, Florida delivery.
- 35—Box, 30 or 40 ton capacity, Tennessee delivery.
- 50—Box, 40 ton capacity, Florida delivery.
- 15—Box, 40 ton capacity, Michigan delivery.

PASSENGER CARS

- 2—Baggage and mail combinations, Texas delivery.
- 3—Passenger, seating 60, Pacific Coast delivery.

BRIDGE MATERIAL

- 1—Span 33 ft long, Cooper's E-40 loading, Pennsylvania delivery.
- 2—Deck plate girders, 70 ft. long, E-50 loading, Kentucky delivery.
- 1—Span, 96 ft. to 108 ft. long, Vermont delivery.

RELAYING RAILS

- 50 tons 20 lb., Arizona delivery.
- 1 carload, 30 lb., Nevada delivery.
- 10 miles, 40 lb., No. 1, North Carolina delivery.
- 1 carload, 50 lb., South Carolina delivery.
- 1 carload, 56 lb., Arkansas delivery.
- 1 carload, 56 lb. to 60 lb., Kentucky delivery.
- 1 mile, 56 lb., Wisconsin delivery.
- 15 miles, 60 or 70 lb., Louisiana delivery.
- 1 carload, 60 lb., South Carolina delivery.
- 10 miles, 70 lb., Ohio delivery.
- 8 miles, 80 or 85 lb., Tennessee delivery.
- 3 miles, 90 lb., Illinois delivery.

MACHINERY

- 2 light pile drivers, Missouri and Texas deliveries.

TRACK SCALE

- 1—100 ton capacity, Wisconsin delivery.

TURNABLES

- 2—50 to 75 ton capacity, North Carolina delivery.
- 1—60 to 70 ton capacity, Louisiana delivery.

TANKS

- 1—Locomotive water tank, capacity 3,600 gal., Central New York delivery.
- 1—Locomotive water tank, square U type, 8 ft. by 20 ft., capacity 3,500 to 4,000 gal., water lines, 2 in., fuel capacity 8 tons, Arkansas delivery.
- 3—Fuel oil storage tanks, 5,000 to 10,000 gal. capacity.

Supply Trade News

The American Steel Foundries are negotiating for the purchase of the Damascus Brake Beam Company.

E. J. Wilkie has been appointed northern sales manager of the Bucyrus Company, with headquarters at Milwaukee, Wis.

R. P. Dryer has been appointed district manager of the Whiting Corporation, with headquarters at 624 Penton building, Cleveland, Ohio.

H. C. Thomas, assistant general manager of the United Alloy Steel Corporation, with headquarters at Canton, Ohio, has been promoted to vice-president.



H. C. Thomas

In 1900 he entered the employ of the Wheeling Steel & Iron Company as a chemist and subsequently was connected in chemical, metallurgical and operating executive capacities with the Alan Wood Iron & Steel Company and with the United States Steel Corporation's plants at Braddock, Pa., Duquesne, Donora, Clairton and Gary, Ind. From 1908 to 1918 he was assistant general superintendent of the United States Steel Corporation's plant at Gary, Ind. On the latter date he resigned to enter the employ of the United Alloy Steel Corporation as general superintendent which position he held until September, 1922, when he was promoted to assistant general manager.

Louis R. Griffin has been appointed carbon brush engineer for the National Carbon Company, Inc., Cleveland, Ohio, in which position he will be connected solely with the railway sales division of the company. Mr. Griffin was born in Chicago, May 20, 1891, and received his education in the public schools and high school of Englewood, later completing courses at the De La Salle Institute and the University of Illinois. He began his business career with the Badger Coal & Coke Company as a salesman and purchaser at mines. Four years later, he became service and sales engineer for the Buda Company in the railway department, in which position he remained for six years. After resigning from the Buda Company, he entered the sales department of the Badger Coal & Coke Company where he remained until he accepted his present position.



L. R. Griffin

F. H. Rood has been appointed engineer of tests of the Pittsburgh Testing Laboratory with headquarters at Pittsburgh, Pa. Mr. Rood is a civil engineer graduate of Syracuse University. For many years he served as engineer of tests for

the New York State Highway Commission and for three years was assistant engineer of tests, Pittsburgh Testing Laboratory; then for two years a research engineer with the U. S. Bureau of Public Roads.

The Latrobe Tool Company, manufacturers of high speed drills and reamers, Latrobe, Pa., has moved its Chicago, Ill., warehouse to 1440 West Lake street.

P. J. Freeman has been appointed consulting engineer and technical adviser of the **Standard Inspection Company** with office at 311 Ross street, Pittsburgh, Pa.

Percy R. Drenning, formerly with the T. H. Symington Company, is now associated with the **Boyden Steel Corporation** as vice-president, with headquarters at Baltimore, Maryland.

The American Steel Foundries has leased the fifteenth and sixteenth floors of the Wrigley building annex, Chicago, for 10 years commencing May 1, 1924, at which time it will move its general offices from the McCormick building.

A. E. Bancroft has been appointed southwestern sales representative of the **Union Metal Products Company** and the **Standard Railway Equipment Company**, with headquarters at 2014 Railway Exchange building, St. Louis, Mo., succeeding the O'Fallon Railroad Supply Company.

Leo Ehlbert, formerly with Engineering & Contracting, has been appointed Western representative with headquarters at 605 Fisher building, Chicago, of the **Railway Equipment & Publication Company**, New York, publishers of the Pocket List and the Equipment Register, succeeding **Charles L. Dinsmore**, who has retired after 20 years of service as Western representative of this company. In tendering his resignation, Mr. Dinsmore acted upon the advice of his physician who has been urging him to retire for the past year.

H. H. Pleasance, general manager of sales of the **United Alloy Steel Corporation**, with headquarters at Canton, Ohio, has been promoted to vice-president, with the same headquarters. Mr. Pleasance entered business with the Standard Oil Company of Cleveland, Ohio, in whose employ he remained until 1903, when he entered the service of the Cambria Steel Company at Cleveland. After a short time in the Cleveland office he was transferred to the Detroit district, which embraced lower Michigan and northern Indiana. In 1913, he resigned from the Cambria Steel Company to enter the employ of the United Steel Company as sales manager, with headquarters at Cleveland, Ohio. In January, 1917, he entered the employ of the United Alloy Steel Corporation as assistant general manager of sales, which position he held until May 1, 1917, when he was promoted to general manager of sales. He held the latter position until his recent promotion.

C. R. Messinger, vice-president and general manager of the **Chain Belt Company**, Milwaukee, Wis., has been promoted to president, succeeding **W. C. Frye**, resigned. Mr. Frye has been associated with the company for 28 years, during which time he has held practically all executive positions. In 1916 he was promoted from treasurer to president, which position he has held until his retirement. Mr. Messinger was general manager of the Sivyver Steel Casting Company from 1911 to 1917 when he entered the employ of the Chain Belt Company.



H. H. Pleasance

Obituary

John N. Reynolds, formerly western manager of the *Railway Age Gazette*, the immediate predecessor of the *Railway Age*, died in San Diego, California, on July 10. He retired from active service in 1913. Mr. Reynolds entered the service of the *Railroad Gazette*, a predecessor of the *Railway Age*, in 1875.

Captain Robert Woolston Hunt

Captain Robert Woolston Hunt, president of Robert W. Hunt & Co., Chicago, died at his home in Chicago on July 11 at the age of 85. Captain Hunt was for many years a well-known figure in the steel industry. He was born on December 9, 1838, in Fallsington, Bucks county, Pa. He spent several years learning the practical side of iron making in the rolling mills of John Burnish & Co., Pottsville, Pa., and later took a course in analytical chemistry in the laboratory of Booth, Garrett & Blair, upon the completion of which he entered the employ of the Cambria Iron Works, Johnstown, Pa., where on August 1, 1860, he established the first laboratory in America as a direct part of an iron or steel organization.



R. W. Hunt

In the fall of 1861 he entered the U. S. military service in command of Camp Curtin, Harrisburg, Pa., where he served as mustering officer for the State of Pennsylvania, with the rank of captain, and in 1864 was mustered into the United States service as a sergeant. After the war he was employed in the experimental Bessemer works of the Cambria Iron Company at Wyandotte, Mich., being placed in charge of those works in July, 1865, and so continued until May, 1866, when he returned to the Cambria Company at Johnstown to take charge of its steel business. While there engaged he had charge of the rolling of the first steel rails made in America on a commercial order.

Later he assisted George Fritz, Cambria's chief engineer, in designing and building its Bessemer works, and assumed charge of it on its completion July 10, 1871. On September 1, 1873, he became superintendent of the Bessemer works of John A. Griswold & Co., Troy, N. Y., and in March, 1875, general superintendent of the Albany & Rensselaer Iron & Steel Company. Mr. Hunt took out several letters patent on steel and iron metallurgical processes and machinery, both individually and in conjunction with others. He put in the first automatic rail mill tables. In April, 1888, he established the bureau of inspection, tests and consultation of Robert W. Hunt & Co., in Chicago.

Mr. Hunt was president of the American Institute of Mining Engineers in 1883, and again in 1906. He was president of the American Society of Mechanical Engineers in 1891, of the Western Society of Engineers in 1893, of the American Society for Testing Material in 1912, and in 1914 American vice-president of the International Association for Testing Materials. He was awarded the John Fritz medal in 1912 for his contributions to the early development of the Bessemer process.

On June 17, 1923, he was the recipient of the Washington award which is presented annually by the Western Society of Engineers acting jointly with the American Society of Civil Engineers, the American Society of Mechanical Engineers, the American Institute of Mining and Metallurgical Engineers, and the American Institute of Electrical Engineers.

Railway Construction

ATCHISON, TOPEKA & SANTA FE.—This company will soon call for bids for the construction of new shop facilities at San Bernardino, to cost approximately \$350,000, as reported in the *Railway Age* of March 3.

CHICAGO & NORTH WESTERN.—This company will construct a coal hopper at Milwaukee, Wis., at a cost of approximately \$35,000.

CHICAGO, ROCK ISLAND & PACIFIC.—This company plans the construction of a new roundhouse at Hutchinson, Kan., to replace the one recently destroyed by fire.

CHICAGO UNION STATION.—This company has awarded a contract to John Griffiths & Son Co., Chicago, for the erection of the headhouse of the Union Station at Chicago, to be completed in 18 months at a cost of \$10,000,000.

DETROIT CONNECTING.—This company has applied to the Interstate Commerce Commission for a certificate of public convenience to construct and operate a line 85 miles in length from Delray (Detroit), Mich., to Marine City. The applicant represents that lack of sufficient main line mileage and congested terminals limit production and industrial expansion of the city of Detroit. The projected line would run through Ecorse, Pontiac, Sylvan Lake Village and Mt. Clemens. Permission to retain excess earnings is requested.

DETROIT & MACKINAC.—This company has been authorized by the Interstate Commerce Commission to construct an extension 12 miles in length from its Avery branch at Alpena, Mich., to Rockport. The Boyne City, Gaylord & Alpena, which had proposed construction of a line between the same towns and over nearly the same route, has withdrawn its application. The main object of the proposed line is to reach the plant of the Kelley Island Lime & Transport Company, at Rockport, on the Shore of Lake Huron.

ELGIN, JOLIET & EASTERN.—This company will construct a new car repair shop at Joliet, Ill., to replace the building recently destroyed by fire. The new structure will be 300 ft. by 500 ft., and will cost approximately \$500,000.

ILLINOIS CENTRAL.—This company has awarded a contract to the Graver Corporation, East Chicago, Ind., for the installation of water treating plants at Webster City, Ia., Iowa Falls, Parkersburg and Dixon, Ill., as reported in the *Railway Age* of May 12. The company has authorized the construction of a new 18-stall roundhouse and coaling station at Council Bluffs, Ia., and will lay additional yard tracks at the same place to double the capacity of the present yard. The total cost of the improvements will be approximately \$500,000.

SOUTHERN PACIFIC.—This company plans the construction of a new passenger station at Glendale, Calif., to cost approximately \$87,000.

UNION PACIFIC.—This company has awarded a contract to the Graver Corporation, East Chicago, Ind., for a 25,000 gallon per hour capacity water treating plant at Armstrong, Kansas, and a plant of the same capacity at Marysville, Kans.

UNION PACIFIC.—This company will construct a freight station, 32 miles of switch tracks, water mains, a sewage system, electric light and power facilities, 20 miles of streets and a dike over four miles long along the Missouri river front in the development of an industrial district at Kansas City, Kan. Initial expenditures during 1923 will come to a total of approximately \$3,000,000.

WESTERN PACIFIC.—This company has awarded a contract to the W. Murcell Company, San Francisco, for the construction of an addition to its locomotive and car shops at Sacramento, Calif., reported in the *Railway Age* of June 16.

Railway Financial News

APPALACHIAN RAILWAY.—To Operate Line.—This company asked authority from the Interstate Commerce Commission, by order of the Superior Court of Swain County, N. C., to operate a line from Ravensford to Parsons Junction, N. C., a distance of 8.38 miles. The line is owned by the applicant but to date has been operated by the Parsons Pulp & Lumber Company. It connects with the line now operated by the applicant at Ravensford. Action taken by J. R. Hall, a storekeeper, inspired the order of the Superior Court from which the railroad has appealed to the Supreme Court of North Carolina.

ATLANTIC COAST LINE.—Plans Improvements.—According to a notice mailed to the stockholders with their dividend checks, July 10, this company will expend \$26,000,000 on the improvement of its line and equipment during the year 1923. Shareholders at the same time are called upon by the railroad to present to the public these facts. The largest expenditure, according to the statement, will be made for the purchase of box cars, while practically \$6,000,000 will be expended by the company in doubling trackage and reducing grades. It is anticipated that all of the road will have been double-tracked by December 31, 1927, except on three large waterways where single track is considered necessary.

In its letter to the stockholders the company says:

Your company has pledged itself, with the other railroads of the country, to do its utmost to furnish adequate service to the public. To this end expenditures of approximately \$26,000,000 have been authorized to be spent as follows:

Five thousand three hundred and thirty-one freight cars, \$9,000,000; 101 passenger train cars, \$2,300,000; 98 locomotives, \$4,500,000; doubling trackage and grade reduction, \$5,900,000; shops and shop facilities, \$1,800,000; yards and other facilities, \$1,300,000; 30,000 tons of 100-lb. rail, \$1,200,000.

BOSTON & MAINE.—Sustains New Haven Demurrer.—Judge Pierce of the Supreme Court has entered a decree sustaining the demurrer of the New York, New Haven & Hartford in a bill in equity brought by Edward D. Codman to enjoin the company from exercising control of about 28.3 per cent of the capital stock of the Boston & Maine, which the trustees of the Boston Railroad Holding Company were ordered by the Federal Court to return to the New Haven road, subject to the provisions of the Massachusetts law. As an individual and as a trustee, Mr. Codman owns 769 acres of Boston & Maine stock.

CANADIAN PACIFIC.—Redeems \$52,000,000 Issue.—This company has called for redemption of all outstanding note certificates of its \$52,000,000 6 per cent ten-year note certificates, due March 2, 1924. The entire amount will be paid off through the Bank of Montreal at offices of that bank in New York, Montreal and London.

CHICAGO, INDIANAPOLIS & LOUISVILLE.—Asks Authority to Purchase Line.—This company has applied to the Interstate Commerce Commission to purchase a part of the Bedford branch of the Baltimore & Ohio Southwestern located in Bedford, Indiana, for \$20,000. The B. & O. Southwestern had proposed to abandon the line.

CHICAGO, MILWAUKEE & ST. PAUL.—Abandonment.—Permission to abandon a portion of a branch line in LaFayette county, Wis., and Jo Davies county, Ill., has been authorized by the Interstate Commerce Commission.

CLEVELAND UNION TERMINALS COMPANY.—Bonds Offered.—J. P. Morgan & Co., the First National Bank and the National City Company are offering \$5,000,000 Cleveland Union Terminals Company first mortgage sinking fund 5 per cent series "B" bonds at 94½ and interest to yield better than 5.30 per cent. These bonds are dated April 1, 1923, and mature April 1, 1973. They are guaranteed as to principal and interest jointly and severally by the New York Central, the Cleveland, Cincinnati, Chicago & St. Louis and the New York, Chicago & St. Louis and are callable at 105 on or after April 1, 1943.

COLUMBUS & GREENVILLE.—To Be Sold.—This 168-mile road will be sold at auction on August 6 at Columbus, Miss.

ELGIN, JOLIET & EASTERN.—Equipment Trust Issue Proposed.—This company has filed application with the Interstate Commerce Commission to issue and sell \$2,000,000 of 5 per cent equipment trust bonds to the U. S. Steel Corporation at par and accrued interest. The proceeds will be applied to the purchase of equipment estimated to cost \$3,063,990, consisting of 500 gondola cars, 300 dump cars, and 15 Mikado locomotives. The bonds will be dated July 1, 1923 and will mature in 16 annual installments of \$125,000 beginning July 1, 1926.

MORGANTOWN & WHEELING.—Sold.—This road was sold to the Monongahela Railway on July 6 when a representative of the newly organized Scotts Run Railway Company, a subsidiary of the Monongahela, bid \$591,930 and assumption of outstanding indebtedness amounting to about \$200,000.

NEW YORK, CHICAGO & ST. LOUIS.—Guarantee of Bonds Approved.—This company has been authorized by the Interstate Commerce Commission to assume joint and several obligation and liability, as guarantor, for \$15,000,000 of 5 per cent first mortgage sinking fund gold bonds, series B, to be issued by the Cleveland Union Terminals Company under date of June 13, 1923.

Exchange of Stocks.—Certificates of deposit of the Guaranty Trust Company of New York, Union Trust Company of Cleveland, and the Continental and Commercial Trust and Savings Bank of Chicago for stock of the New York, Chicago & St. Louis, Toledo, St. Louis & Western, and the Lake Erie & Western may now be exchanged at the trust department of the Guaranty Trust Company of New York for the proportionate amount of stock of the new consolidated company known as the New York, Chicago & St. Louis Railroad Company.

The books for the transfer of the certificates of deposit closed July 7, and the dividend of 3 per cent will be paid on said certificates as of record July 7, on the basis of the proportionate amount of stock of the new company to be retained, said dividend being payable on July 16.

NEW YORK, NEW HAVEN & HARTFORD.—Report of New England Committee.—After a meeting of the board of directors on Tuesday at which the Storrow report to the New England governors was considered, E. G. Buckland, vice-president and general counsel of the New Haven, said:

"The board is in hearty sympathy with the purpose of the joint New England committee to secure a New England system of railroads, and with the committee's proposed policy of rehabilitation by co-operation, but has not yet had time to consider how far the various means proposed by the committee for reaching that end are feasible or desirable. The board is giving special attention to the report preparatory to making a statement at a later date." See also Boston & Maine.

NEW YORK, ONTARIO & WESTERN.—To Buy Oswego Property.—This company has applied to the Interstate Commerce Commission for authority to purchase a tract at Oswego, N. Y., upon which its lake shipping facilities are located, at a cost of \$285,000, of which \$100,000 is to be paid in cash. A lease which the applicant holds on the property will expire October 1. The present owner is the Inland Lakes to Sea Terminal Corporation.

NORTHWESTERN PACIFIC.—Bond Issue Approved.—This company was authorized by the Interstate Commerce Commission to issue \$1,208,000 of first and refunding mortgage bonds to be sold at not less than 95 per cent of par and the proceeds used to reimburse the applicant's treasury in part for expenditures on construction and additions and betterments.

PITTSBURGH & WEST VIRGINIA.—New Directors.—A. C. Dent and W. T. Smith of W. A. Harriman & Co., Inc., and Joseph R. Kraus of Cleveland have been elected directors, succeeding W. H. Coverdale, chairman of the board, Haley Fisk, president of the Metropolitan Life Insurance Co., and Ernest Stauffen, Jr. Charles F. Taplin, Frank E. Taplin and John Sherwin, Jr., representing important Cleveland interests, have been elected members of the board to fill existing vacancies. Frank E. Taplin has been elected chairman of the board. Asa S. Wing, of Philadelphia, B. Dennis and W. T. Smith have resigned from the board.

The new directors represent the Tuttle-Harriman interests, who exercised the 60-day option on 25,000 shares of common stock and 7,500 shares of preferred stock of the Pittsburgh & West Virginia held by the Metropolitan Life Insurance Company.

SACRAMENTO NORTHERN.—Acquisition Denied.—See Western Pacific.

WEST SIDE BELT.—New Directors.—Charles F. Taplin, Frank E. Taplin and Joseph E. Kraus have been elected directors of this road, a subsidiary of the Pittsburgh & West Virginia.

WESTERN MARYLAND.—To Issue Equipment Certificates.—This company has been given authority by the Interstate Commerce Commission to assume obligation and liability for \$1,500,000 of Western Maryland equipment trust certificates, series C, to be sold at not less than 95.875 per cent of par in connection with the procurement of equipment.

WESTERN PACIFIC.—Acquisition of Sacramento Northern Denied.—Acquisition control of the Sacramento Northern, an interurban electric railway, by purchase of its stock has again been denied by the Interstate Commerce Commission. Upon rehearing following the commission's original order May 18 last year, the Western Pacific contended that the electric lines will not be operated as part of its system and therefore that neither the Sacramento Northern Railroad nor the Sacramento Northern Railway, the new company, are subject to the commission's jurisdiction.

The Commission establishes jurisdiction to its own satisfaction over the new company because it is "a corporation organized for the purpose of engaging in transportation by railroad," as set forth in Paragraph 1, Section 20a, of the Interstate Commerce Act. The jurisdictional question is discussed to some length by the Commission, but the latter concludes that even without jurisdiction over corporations organized for the purpose of operating independently as interurban electric railways, the new Sacramento company does not fall within the exception.

The Commission points to the character of the new company which authorizes it to engage in and conduct the business of transportation and "to construct, build, own, hold, control, use, maintain and operate railroads, including steam, electric interurban, street, and all other kinds of railroads." Declaring that the charter of a corporation is the measure of its powers, and the powers which the charter confers are the prime indicia of the purposes for which the corporation is organized, the Commission concludes that the new company is a "corporation organized for the purpose of engaging in transportation," regardless of what the particular intent may be at this time with respect to the operation of the railroad. The Commission states further that it is impossible to escape the conclusion that the Sacramento Northern will be operated as part of the Western Pacific system. The Commission then affirms its original order denying acquisition by the Western Pacific on the ground that the Sacramento Northern Railway, the new company, must apply to the Commission under Section 20a of the Interstate Commerce Act for authority to issue its stock and assume the proposed obligations with respect to the securities of the Sacramento Northern Railroad, the old company.

WYOMING & MISSOURI RIVER.—To Purchase Line.—This company has applied to the Interstate Commerce Commission for authority to issue \$50,000 of capital stock at \$100 par to Mahlon S. Kemmerer, of Mauch Chunk, Pa., as payment for the railroad running between Belle Fourche, S. D., and Aladdin, Wyo., formerly owned by the Wyoming & Missouri River. The line is about 7 miles in length.

Treasury Payments to Railroads

Since last announcement, dated June 1, 1923, payments under Sections 204, 209, 210 and 212 of the Transportation Act, 1920, as amended, have been made by the Treasury as follows:

Section 204:	
Bauxite & Northern.....	\$18,265
Bonlee & Western.....	1,558
Carrollton & Worthville.....	9,111
Colorado & Southeastern.....	18,734
Duluth & Northeastern.....	175,221
Fordyce & Princeton.....	33,121
Kansas City Northwestern.....	598,462
Massena Terminal Railroad.....	19,354
Ouachita & Northwestern.....	30,459
Sierra Railway of California.....	74,080
Tonopah & Tidewater.....	70,998
Washington, Idaho & Montana.....	47,807
Wiscasset, Waterville & Farmington.....	14,484
Section 209:	
Abilene & Southern.....	61,731
Angelina & Neches River.....	5,587
Baltimore & Ohio.....	5,672,416
Bauxite & Northern.....	6,430
Carrollton & Worthville.....	1,052
Chicago, Burlington & Quincy.....	4,638,464
Chicago, Terre Haute & Southeastern.....	83,092
Chicago, Palatine & Wauconda.....	1,110
Colorado-Kansas.....	3,599
Lawndale Railway & Industrial Co.....	3,894
Millers Creek Railroad.....	10,047
Nacogdoches & Southeastern.....	621
Quincy, Omaha & Kansas City.....	252,364
Toledo, Angola & Western.....	2,507
Wabash, Chester & Western.....	21,739
Zanesville & Western.....	48,832
Section 210:	
Norfolk Southern.....	71,000

Seaboard Air Line.....	\$3,000,000
Section 212: Boston & Maine.....	100,000
Total.....	\$15,096,158
Total payments to June 30, 1923:	
(a) Under Section 204, as amended by Section 212 for reimbursement of deficits during federal control:	
(1) Final payments, including partial payments previously made.....	\$7,203,364
(2) Partial payments to carriers as to which a certificate for final payment has not been received by the Treasury from the Interstate Commerce Commission	694,837
Total payments account reimbursement of deficits.....	\$7,898,201
(b) Under Section 209, as amended by Section 212 for guaranty in respect to railway operating income for first six months after federal control:	
(1) Final payments, including advances and partial payments previously made	\$205,893,602
(2) Advances to carriers as to which a certificate for final payments has not been received by the Treasury from the Interstate Commerce Commission	183,575,022
(3) Partial payments to carriers as to which a certificate for final payment has not been received, as stated above	89,132,922
Total payments account of said guaranty.....	478,601,546
(c) Under Section 210 for loans from the revolving fund of \$300,000,000 therein provided.....	337,629,667
Total	\$824,129,414

Dividends Declared

Lake Erie & Western.—\$1.35 on the certificates of deposit and \$2.70 on the preferred stock certificates of deposit, both dividends payable July 16.
Nashville, Chattanooga & St. Louis.—3½ per cent, semi-annually, payable August 1 to holders of record July 21.
Toledo, St. Louis & Western.—\$2.40 on the certificates of deposit and \$1.95 on the preferred certificates of deposit, both payable July 16.

Trend of Railway Stock and Bond Prices

	July 10	Last Week	Last Year
Average price of 20 representative railway stocks	60.68	59.76	67.25
Average price of 20 representative railway bonds	82.31	82.25	87.02

DESPITE ALL EFFORTS to emphasize the perils of recklessness, grade crossing accidents on the Pennsylvania Railroad during June, showed an increase of 60 per cent as compared with the corresponding month of 1922, and an increase of 115 per cent over the same month of 1921. A large majority of these accidents involved motor vehicles. The month's records for all three years show the following:

	Total accidents	Persons killed	Persons injured
June, 1921.....	19	6	20
June, 1922.....	23	14	21
June, 1923.....	33	19	37

Reports in the newspapers throughout the country indicate that the experience of the Pennsylvania Railroad in this respect, closely corresponds to that of the country as a whole. An examination of the reports shows that defective automobile brakes, disregard of crossing watchmen's signals to stop, stalling on tracks, high speed and other forms of reckless driving are the primary causes of the increase in deaths and injuries.

ELISHA LEE, vice-president of the Pennsylvania Railroad, in charge of the Eastern Region, in a letter to General Manager C. S. Krick, has expressed warm appreciation for the loyalty and efficiency with which the operating forces of the road met the emergency created by the burning of the train shed at Broad street, Philadelphia, on June 11. Because of knowledge of former experiences, the vice-president expected nothing else; but the unusual character of this emergency warrants special recognition of the promptness, efficiency and good judgment displayed on all hands, by both officers and subordinates. Magnificent order prevailed everywhere and the complete absence of confusion was noticeable. No names are mentioned in the letter, but the Philadelphia Terminal Division, which bore the brunt of the work, is specified; at the same time a full share of credit is accorded the adjoining divisions whose forces came to the assistance of the Philadelphia Terminal Division. Commendatory letters have also been sent to the Traffic Manager J. L. Eysmans, Purchasing Agent Montgomery Smith and Chief Engineer A. C. Shand.

Railway Officers

Executive

S. E. Summerfield has been elected vice-president of the Ann Arbor with headquarters at New York, succeeding W. M. Wadden, resigned.

W. H. Fetner, superintendent of motive power of the Central of Georgia with headquarters at Savannah, Ga., has been appointed assistant to the president of the Missouri Pacific with headquarters at St. Louis, Mo.

W. G. Paine, vice-president, traffic manager and treasurer of the Spokane & Eastern with headquarters at Spokane, Wash., has been appointed vice-president in charge of operation, in addition to former duties, succeeding F. E. Connors, deceased.

Financial, Legal and Accounting

J. F. Cress, assistant treasurer and auditor of the Ann Arbor with headquarters at Toledo, Ohio, has been promoted to auditor and treasurer with the same headquarters.

R. E. DeNeefe has been appointed controller of the Gulf, Mobile & Northern with headquarters at Mobile, Ala., succeeding F. M. Hicks, who has resigned to devote all of his time to his duties as traffic manager.

Geo. H. Gardner has been appointed assistant general attorney of the Chesapeake & Ohio. His headquarters will be at Richmond, Virginia, effective July 1. He was born at Washington, D. C., October 31, 1885, and was educated in the public schools of Louisville, Ky., and Manual Training High School and studied law at the Jefferson School of Law from which he was graduated in 1911. In the spring of that year he was admitted to the Kentucky bar. In 1908 he entered the accounting department of the Louisville & Nashville, in which department he remained until 1912 when he entered the legal department of that road. In 1918 he was promoted to district claims attorney with headquarters at Nashville, Tenn., where he remained until April, 1921, when he resigned to become attorney-examiner, Division of Finance, Interstate Commerce Commission at Washington, which position he was holding at the time of his recent appointment.

Operating

C. J. Kavanagh has been appointed assistant to the general superintendent of the Pere Marquette with headquarters at Detroit, Mich.

T. F. Carberry, general fuel supervisor of the Missouri Pacific, with headquarters at St. Louis, Mo., has been appointed superintendent of fuel conservation, with the same headquarters.

J. W. Hewitt, general manager of the Sumpter Valley, with headquarters at Baker, Ore., has resigned. A. S. Howe, master mechanic, with headquarters at Baker has been promoted to acting general manager, with the same headquarters, succeeding Mr. Hewitt.

G. W. Moran, assistant trainmaster on the Nashville, Chattanooga & St. Louis with headquarters at Hollow Rock Junction, Tenn., has been transferred to the Centreville Branch with headquarters at Dixon, Tenn. W. J. Cunningham has been appointed assistant trainmaster with headquarters at Hollow Rock Junction, succeeding Mr. Moran.

C. D. Peckenpugh, acting general superintendent of the Missouri district of the Chicago, Burlington & Quincy, with headquarters at St. Louis, Mo., has been promoted to general superintendent of the Missouri district, with the same headquarters, succeeding N. L. Howard, who has been appointed

superintendent of transportation, with headquarters at Chicago. **H. D. Brown**, acting superintendent of the Aurora division, with headquarters at Aurora, Ill., has been promoted to superintendent.

Traffic

E. Cerdan, general agent for the National Railways of Mexico, with headquarters at Chicago, has been promoted to assistant general freight agent, with headquarters at Mexico City.

W. J. Keller, division freight agent of the New York Central, with headquarters at Toledo, Ohio, has been promoted to assistant general freight agent, with headquarters at Cleveland, Ohio, succeeding **B. J. Corbron**, who has been promoted.

W. H. Murray, assistant general passenger agent of the Union Pacific, with headquarters at Omaha, Neb., has been promoted to general passenger agent, with the same headquarters, succeeding **A. L. Craig**, whose death on June 5 was reported in the *Railway Age* of June 9.

E. B. Blair, assistant general freight agent of the Mobile & Ohio, with headquarters at New Orleans, La., has been promoted to general eastern freight agent, with headquarters at New York. **W. H. Eggerton**, commercial agent, with headquarters at New Orleans, has been promoted to assistant general freight agent, with the same headquarters, succeeding **Mr. Blair**.

A. W. Noyes, whose promotion to general passenger agent of the Chicago Great Western, with headquarters at Chicago, was reported in the *Railway Age* of June 23, was born on June 13, 1866, at Lebanon, Conn. He entered railway service in 1885 as agent and telegraph operator on the New York, New Haven & Hartford, being engaged in this work at various points in Connecticut until 1888, when he was appointed agent and telegraph operator on the St. Paul & Duluth. In 1889 he was appointed telegraph operator on the Great Northern, subsequently being appointed secretary to the general traffic manager. **Mr. Noyes** entered the service of the Chicago Great Western in 1892 as assistant ticket agent at Des Moines, Iowa, and was later consecutively promoted to traveling passenger agent and general traveling passenger agent, with headquarters at Chicago. He was promoted to assistant general passenger agent on April 1, 1922, and was serving in this position at the time of his recent promotion to general passenger agent.



A. W. Noyes

Mechanical

C. L. Dickert, master mechanic on the Central of Georgia with headquarters at Macon, Ga., has been promoted to superintendent of motive power with headquarters at Savannah, Ga., succeeding **W. H. Fetner**, resigned.

G. N. DeGuire, whose appointment as manager of the Department of Equipment, United States Railroad Administration, was announced in the *Railway Age* of July 7, page 53, was born at Appleton, Wis., on March 31, 1880, and received a public and high school education in that city which was later supplemented by courses in various branches of railroading with the International Correspondence Schools of Scranton, Pa., and special courses of study instituted by the Chicago & North Western Railway. At the age of 17 he entered the shops of the Valley Iron Works, Appleton, Wis., as a machinist's apprentice. After serving four years in that capacity, he resigned to enter the service

of the Chicago & North Western at Kaukauna, Wis., as a locomotive fireman, and was promoted to locomotive engineer in 1905. Seven years later he was granted a leave of absence covering a large portion of each year and which extended over a period of four years, so as to permit him to visit the principal railroad terminals in the central and eastern parts of the United States for the purpose of making a study of shop and engine-house operation and the construction and maintenance of locomotives and cars. Following this **Mr. DeGuire** arranged for and supervised a special course at the Chicago shops of the Chicago & North Western covering construction and maintenance of locomotive boilers. In 1916 he was appointed inspector in the Bureau of Locomotive Inspection in the Philadelphia district. On January 1, 1918, when the railroads were placed under federal control **Mr. DeGuire** was appointed general supervisor of equipment, division of operation, in charge of shop and engine house operation on lines east of Chicago, and was later promoted to assistant manager, department of equipment, which position he was holding at the time of his recent promotion.

Engineering, Maintenance of Way and Signaling

Major Eugene Betts has been appointed assistant consulting engineer of the Southern Pacific with headquarters at New York, succeeding **C. R. Harding**, who was promoted to consulting engineer upon the retirement of **J. D. Isaacs**. **Major Betts** was born in Hackensack, N. J., and is 51 years of age. He was graduated from Rutgers College in 1892 with the degrees of B. S., M. S. and E. E. He had extensive experience as an engineer and manager of railway, light and power properties before entering military service. From 1907 to 1910 he was located at Bogota, Colombia, rebuilding the street railway and power plant of the Bogota City Railway Company. He served as United States Consul-general to Colombia for one year and acted as the traction company's general attorney in the transfer of its properties to the municipality of Bogota. During 1911 he served as a consulting engineer for certain private interests. From 1912 to 1916 he was electrical engineer for **J. G. White & Company**, New York, in the purchase of a Mexican utility property and also at Buenos Aires and Santa Fe, Argentina. In 1917 he entered the service of the Thompson-Starrett Company on construction work at Camp Upton. During the same year he was commissioned a major in the Construction Division of the Quartermaster Corps and served in that capacity throughout the period of the war. On leaving military service he became an assistant engineer for the Southern Pacific and served in that capacity until the time of his recent promotion.



E. Betts

Special

T. T. Maxey, general advertising agent of the Chicago, Burlington & Quincy with headquarters at Chicago, has resigned to engage in other business.

Obituary

J. B. Call, general freight and passenger agent of the Green Bay & Western, with headquarters at Green Bay, Wis., died in that city on June 25.

Alfred Clark, general manager of the International Railway of Central America with headquarters at Guatemala City, Guatemala, and former general manager of the National Railways of Mexico, died at Long Beach, Cal., on July 7.